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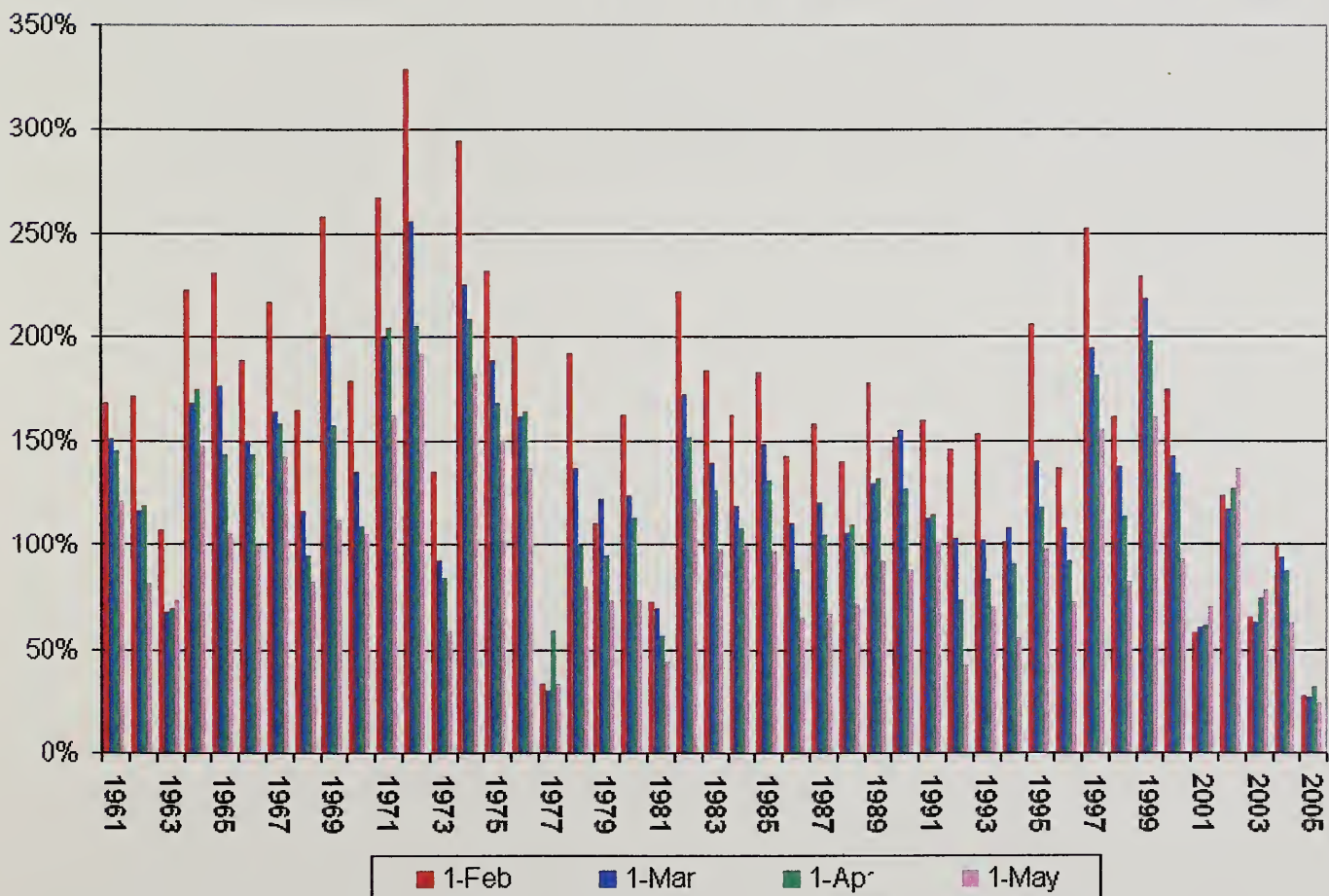
# Washington

## Water Supply Outlook Report

### May 1, 2005

NRCS Natural Resources  
Conservation Service

#### Statewide Average Snowpack (oldwest) 1961 - Present



# Water Supply Outlook Reports and Federal - State – Private Cooperative Snow Surveys

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## *How forecasts are made*

Most of the annual streamflow in the western United States originates as snowfall that has accumulated in the mountains during the winter and early spring. As the snowpack accumulates, hydrologists estimate the runoff that will occur when it melts. Measurements of snow water equivalent at selected manual snow courses and automated SNOTEL sites, along with precipitation, antecedent streamflow, and indices of the El Niño / Southern Oscillation are used in computerized statistical and simulation models to prepare runoff forecasts. These forecasts are coordinated between hydrologists in the Natural Resources Conservation Service and the National Weather Service. Unless otherwise specified, all forecasts are for flows that would occur naturally without any upstream influences.

Forecasts of any kind, of course, are not perfect. Streamflow forecast uncertainty arises from three primary sources: (1) uncertain knowledge of future weather conditions, (2) uncertainty in the forecasting procedure, and (3) errors in the data. The forecast, therefore, must be interpreted not as a single value but rather as a range of values with specific probabilities of occurrence. The middle of the range is expressed by the 50% exceedance probability forecast, for which there is a 50% chance that the actual flow will be above, and a 50% chance that the actual flow will be below, this value. To describe the expected range around this 50% value, four other forecasts are provided, two smaller values (90% and 70% exceedance probability) and two larger values (30%, and 10% exceedance probability). For example, there is a 90% chance that the actual flow will be more than the 90% exceedance probability forecast. The others can be interpreted similarly.

The wider the spread among these values, the more uncertain the forecast. As the season progresses, forecasts become more accurate, primarily because a greater portion of the future weather conditions become known; this is reflected by a narrowing of the range around the 50% exceedance probability forecast. Users should take this uncertainty into consideration when making operational decisions by selecting forecasts corresponding to the level of risk they are willing to assume about the amount of water to be expected. If users anticipate receiving a lesser supply of water, or if they wish to increase their chances of having an adequate supply of water for their operations, they may want to base their decisions on the 90% or 70% exceedance probability forecasts, or something in between. On the other hand, if users are concerned about receiving too much water (for example, threat of flooding), they may want to base their decisions on the 30% or 10% exceedance probability forecasts, or something in between. Regardless of the forecast value users choose for operations, they should be prepared to deal with either more or less water. (Users should remember that even if the 90% exceedance probability forecast is used, there is still a 10% chance of receiving less than this amount.) By using the exceedance probability information, users can easily determine the chances of receiving more or less water.

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# Washington Water Supply Outlook

May 2005

## General Outlook

Washington State managed to win a couple of rounds in this epic battle of snowpack preservation. However it appears that the proverbial towel has been thrown in the ring, as evidenced by record snowmelt over the past 15 days. Snow sites and even complete basins are rapidly succumbing to the inevitable K.O., in this, one of the worst snowpack and water supply years on record. Most streams in Washington generally record peak annual streamflows during the snowmelt months of May-July. However this year was different in that many streams recorded those annual peaks during the rain-on-snow event in January. Most all streams have reached their snowmelt runoff peak at record or near record lows and can expect extremely low flows throughout the rest of the runoff period. Long-range weather forecasts indicate a continuation of above average temperatures with chances of near average precipitation through the summer.

## Snowpack

The May 1 statewide SNOTEL readings increased from last month to 23% of average. Many basins are now snow free which is 1-2 months earlier than normal. Readings in the Kettle River Basin (including Canadian data) reported the highest at 64% of average. Westside averages from SNOTEL, and May 1 snow surveys, included the North Puget Sound river basins with 29% of average, the Central Puget river basins with 19%, and the Lewis-Cowlitz basins with 20% of average. Snowpack along the east slopes of the Cascade Mountains included the Yakima area with 20% and the Wenatchee area with 17%. Snowpack in the Spokane River Basin was at 32% and the Walla Walla River Basin had 9% of average. Maximum snow cover in Washington was at Paradise Park SNOTEL near Mt. Rainer, with water content of 33.7 inches. This site would normally have 74.8 inches of water content on May 1. Last year at this time Paradise Park had 73.1 inches of snow water.

BASIN	PERCENT OF LAST YEAR	PERCENT OF AVERAGE
Spokane .....	48 .....	32
Pend Oreille .....	94 .....	56
Okanogan .....	79 .....	44
Methow .....	51 .....	28
Conconully Lake .....	0 .....	0
Wenatchee .....	36 .....	17
Chelan .....	65 .....	35
Upper Yakima .....	24 .....	12
Lower Yakima .....	35 .....	28
Ahtanum Creek .....	38 .....	18
Walla Walla .....	13 .....	9
Lower Snake .....	67 .....	49
Cowlitz .....	31 .....	30
Lewis .....	12 .....	10
White .....	49 .....	36
Green .....	4 .....	3
Cedar .....	0 .....	0
Snoqualmie .....	29 .....	18
Skykomish .....	26 .....	15
Skagit .....	52 .....	29
Baker .....	N/A .....	N/A
Nooksack .....	45 .....	0
Olympic Peninsula .....	29 .....	15

## Precipitation

During the month of April, the National Weather Service and Natural Resources Conservation Service climate stations reported precipitation totals ranging from 69% to 116% of average in Washington river basins. The highest percent of average in the state was at Everett, WA which reported 192% of average for a total of 5.69 inches. The average for this site is 2.96 inches for April. Thunder Basin SNOTEL reported the least at only 45% of normal. The wettest spot in the state was reported at Sheep Canyon SNOTEL in the Lewis River Basin with an April accumulation of 13.3 inches. Basin averages for the water year remain below average with the Olympic Peninsula and North Puget Sound reporting the highest at 79% and the Walla Walla River Basin with the lowest at 59% of average.

RIVER BASIN	APRIL PERCENT OF AVERAGE	WATER YEAR PERCENT OF AVERAGE
Spokane .....	120 .....	75
Colville-Pend Oreille .....	111 .....	74
Okanogan-Methow .....	88 .....	70
Wenatchee-Chelan .....	93 .....	65
Upper Yakima .....	89 .....	59
Lower Yakima .....	94 .....	57
Walla Walla .....	87 .....	57
Lower Snake .....	111 .....	77
Cowlitz-Lewis .....	100 .....	61
White-Green-Puyallup .....	97 .....	63
Central Puget Sound .....	95 .....	74
North Puget Sound .....	97 .....	76
Olympic Peninsula .....	77 .....	76

## Reservoir

Seasonal reservoir levels in Washington vary greatly due to specific watershed management practices required in preparation for irrigation season, fisheries management, power generation and flood control. Reservoir storage in the Yakima Basin was 603,000-acre feet, 97% of average for the Upper Reaches and 213,000-acre feet, 126% of average for Rimrock and Bumping Lakes. Storage at the Okanogan reservoirs was 66% of average for May 1. The power generation reservoirs included the following: Coeur d'Alene Lake, 199,000 acre feet, 80% of average and 83% of capacity; Chelan Lake, 545,000-acre feet, 205% of average and 81% of capacity; and the Skagit River reservoirs at 155% of average and 82% of capacity.

BASIN	PERCENT OF CAPACITY	CURRENT STORAGE AS PERCENT OF AVERAGE
Spokane .....	83 .....	80
Colville-Pend Oreille .....	N/A .....	N/A
Okanogan-Methow .....	54 .....	66
Wenatchee-Chelan .....	81 .....	205
Upper Yakima .....	72 .....	97
Lower Yakima .....	92 .....	126
North Puget Sound .....	82 .....	155

*For more information contact your local Natural Resources Conservation Service office.*



## Streamflow

May forecasts vary from 98% of average for the Kettle River near Laurier to 17% of average for Ahtanum Creek at Union Gap. May-September forecasts for some Western Washington streams include the Cedar River near Cedar Falls, 46%; Green River, 34%; and Skagit River, 54%. Some Eastern Washington streams include the Yakima River near Parker, 32%; Wenatchee River at Plain, 48%; and Spokane River near Post Falls, 43%. Volumetric forecasts are developed using current, historic and average snowpack, precipitation and streamflow data collected and coordinated by organizations cooperating with NRCS.

Statewide April streamflows also varied with many streams reaching peak snowmelt runoff during the month. The Kettle River near Laurier had the highest reported flows with 128% of average. The Yakima River at Kiona with 35% of average was the lowest in the state. Other streamflows were the following percentage of average: the Cowlitz at Castle Rock, 105%; the Spokane at Spokane, 69%; the Columbia below Rock Island Dam, 87%; and the Cle Elum near Roslyn, 76%.

BASIN	PERCENT OF AVERAGE (50 PERCENT CHANCE OF EXCEEDENCE)
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Spokane .....	41-51
Colville-Pend Oreille .....	32-98
Okanogan-Methow .....	43-57
Wenatchee-Chelan .....	44-77
Upper Yakima .....	27-40
Lower Yakima .....	17-42
Walla Walla .....	31-67
Lower Snake .....	54-58
Cowlitz-Lewis .....	30-65
White-Green-Puyallup .....	34-55
Central Puget Sound .....	46-56
North Puget Sound .....	54-77
Olympic Peninsula .....	52-60

STREAM	PERCENT OF AVERAGE APRIL STREAMFLOWS
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Pend Oreille Below Box Canyon .....	71
Kettle at Laurier .....	128
Columbia at Birchbank .....	104
Spokane at Long Lake .....	70
Similkameen at Nighthawk .....	100
Okanogan at Tonasket .....	92
Methow at Pateros .....	70
Chelan at Chelan .....	76
Wenatchee at Pashastin .....	68
Yakima at Cle Elum .....	69
Yakima at Parker .....	52
Naches at Naches .....	57
Grande Ronde at Troy .....	59
Snake below Lower Granite Dam .....	57
SF Walla Walla near Milton Freewater .....	91
Columbia River at The Dalles .....	75
Lewis at Ariel .....	103
Cowlitz below Mayfield Dam .....	102
Skagit at Concrete .....	104

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# BASIN SUMMARY OF SNOW COURSE DATA

MAY 2005

SNOW COURSE	ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 1971-00
ABERDEEN LAKE CAN.	4000	5/02/05	0	.0	.0	1.1
ALPINE MEADOWS SNTL	3500	5/01/05	---	14.0	38.9	45.8
AMEROSE	6480	4/29/05	20	5.8	4.3	11.1
ASHLEY DIVIDE	4820	4/26/05	0	.0	.0	1.1
BADGER PASS SNOTEL	6900	5/01/05	54	21.5	24.9	36.2
BARRE CREEK	5500	4/27/05	49	20.1	30.8	40.3
BARRE MIDWAY	4600	4/27/05	21	7.5	22.6	27.4
BARRE TRAIL	3800	4/27/05	0	.0	.0	1.3
BARKER LAKES SNOTEL	8250	5/01/05	51	15.4	12.7	16.2
BARNES CREEK CAN.	5320	4/29/05	41	17.2	13.3	19.7
BASIN CREEK SNOTEL	7180	5/01/05	27	8.4	9.0	10.0
BASSOO PEAK	5150	4/26/05	0	.0	.0	3.2
BEAVER CREEK TRAIL	2200	4/28/05	0	.0	.0	4.4
BEAVER PASS	3680	4/28/05	13	3.1	16.0	27.2
BEAVER PASS SNOTEL	3680	5/01/05	34	14.5	25.9	--
BERNE-MILL CREEK (d)	3170	5/01/05	7	2.8	17.9	22.5
BIG WHITE MTN CAN.	5510	5/01/05	34	14.5	13.2	19.4
BLACK MOUNTAIN	7750	4/29/05	40	12.6	13.0	16.9
BLACK PINE SNOTEL	7100	5/01/05	27	8.5	.9	11.0
BLACKWALL PEAK CAN.	6370	5/01/05	---	15.8E	23.0	34.9
BLEWETT PASS#2 SNOTEL	4270	5/01/05	0	.0	.0	5.0
BLUE LAKE	5900	4/25/05	33	11.8	11.6	22.4
BRENDA MINE CAN.	4450	5/01/05	---	.0E	.0	9.3
BROOKMERE CAN.	3000	4/30/05	0	.0	1.3	4.0
BROWN TOP AM	6000	4/28/05	63	26.0	28.3	62.1
BRUSH CREEK TIMBER	5000	4/28/05	0	.0	.0	3.6
BULL MOUNTAIN	6600	4/29/05	4	.8	.0	2.6
BUMPING RIDGE SNOTEL	4600	5/01/05	1	.4	17.1	27.5
BUNCHGRASS MDWS SNOTEL	5000	5/01/05	38	15.4	16.4	28.6
BURNT MOUNTAIN PIL	4200	5/01/05	0	.0	2.1	--
CAMI CAN.	4100	5/01/05	0	.0	.0	1.1
CAYUSE PASS	5300	4/29/05	---	31.9	--	89.1
CHESSMAN RESERVOIR	6200	4/28/05	6	.7	.0	1.7
CHICKEN CREEK	4060	4/26/05	0	.0	4.3	5.4
CHITWAUKUM G.S.	2500	5/01/05	0	.0	.0	1.7
COMBINATION SNOTEL	5600	5/01/05	0	.0	.0	1.2
COPPER BOTTOM SNOTEL	5200	5/01/05	0	.0	.0	4.5
COPPER MOUNTAIN	7700	4/26/05	25	8.9	6.5	10.0
CORRAL PASS SNOTEL	6000	5/01/05	---	13.1	34.5	35.3
COTTONWOOD CREEK	6400	4/29/05	16	6.0	6.1	7.3
COUGAR MTN. SNOTEL	3200	5/01/05	0	.0	.0	11.0
COX VALLEY	4500	4/29/05	11	4.4	26.6	37.1
COYOTE HILL	4200	4/28/05	0	.0	.0	2.6
DALY CREEK SNOTEL	5780	5/01/05	10	3.7	.0	5.3
DEER PARK	5200	4/29/05	0	.0	.0	15.2
DEVILS PARK	5900	4/28/05	46	17.6	40.0	44.7
DISCOVERY BASIN	7050	4/28/05	22	6.5	5.0	9.4
DIX HILL	6400	5/01/05	0	.0	.0	3.8
DUNGENESS SNOTEL	4100	5/01/05	0	.0	.0	--
EAST FORK R.S.	5400	4/29/05	0	.0	.0	.7
ELBOW LAKE SNOTEL	3200	5/01/05	0	.0	14.6	32.5
EMERY CREEK SNOTEL	4350	5/01/05	0	.0	.0	7.4
ENDERBY CAN.	5800	4/30/05	81	34.6	32.7	43.5
ESPERON CK. UP CAN.	5050	5/01/05	20	10.3	13.8	15.4
FARRON CAN.	4000	4/27/05	16	6.1	4.2	8.1
FATTY CREEK	5500	4/26/05	42	16.7	14.4	23.4
FISH CREEK	8000	4/29/05	31	9.4	11.0	11.5
FISH LAKE	3370	4/27/05	0	.0	9.6	23.1
FISH LAKE SNOTEL	3370	5/01/05	3	.8	13.1	28.8
FLATTOP MTN SNOTEL	6300	5/01/05	79	31.8	37.2	46.7
FLECKER RIDGE	7500	4/29/05	18	5.1	.6	8.7
FOURTH OF JULY SUM	3200	4/29/05	0	.0	.0	.3
FREEZEOUT CK. TRAIL	3500	4/28/05	0	.0	.4	6.4
FROENER MDWS SNOTEL	6480	5/01/05	22	8.0	2.5	6.5
GRASS MOUNTAIN #2	2900	5/03/05	0	.0	.0	--
GRAVE CRK SNOTEL	4300	5/01/05	0	.0	.8	7.0
GRAYSTOKE LAKE CAN.	5500	4/29/05	32	11.0	11.3	16.2
GREEN LAKE SNOTEL	6000	5/01/05	14	6.5	17.1	24.6
GREYBACK RES CAN.	4700	5/02/05	7	2.4	3.1	7.0
GRIFFIN CR DIVIDE	5150	4/26/05	0	.0	.0	4.9
GROUSE CAMP SNOTEL	5380	5/01/05	3	1.2	3.3	11.1
HAMILTON HILL CAN.	4550	4/29/05	0	.0	.6	10.6
HAND CREEK SNOTEL	5030	5/01/05	0	.0	.0	6.8
HARTS PASS SNOTEL	6500	5/01/05	39	13.8	28.7	47.7
HELL ROARING DIVIDE	5770	4/25/05	52	20.1	24.0	29.0
HERRIG JUNCTION	4850	4/26/05	37	14.7	17.0	22.9
HIGH RIDGE SNOTEL	4980	5/01/05	0	.0	11.4	15.9
HOLBROOK	4530	4/29/05	0	.0	.0	1.2
HOODOO BASIN SNOTEL	6050	5/01/05	76	28.4	31.2	45.7
HUCKLEBERRY SNOTEL	2000	5/01/05	0	.0	.0	--
HUMBOLDT GLCH SNOTEL	4250	5/01/05	0	.0	1.4	5.5
HURRICANE	4500	5/01/05	0	.0E	11.0	17.9
INTERGAARD	6450	4/27/05	5	1.0	.0	6.1
ISINTOK LAKE CAN.	5100	4/28/05	0	.0	1.3	5.4
JUNE LAKE SNOTEL	3200	5/01/05	0	.0	22.7	29.6
KLESILKWA CAN.	3450	4/27/05	0	.0	.0	4.8
KRAFT CREEK SNOTEL	4750	5/01/05	0	.0	.0	5.2
LESTER CREEK	3100	5/03/05	0	.0	13.5	16.6

SNOW COURSE	ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 1971-00
LIGHTNING LAKE CAN.	3700	4/29/05	1	.3	5.2	9.1
LOGAN CREEK	4300	4/28/05	0	.0	.0	1.1
LOLO PASS SNOTEL	5240	5/01/05	33	12.3	12.9	24.1
LONE PINE SNOTEL	3800	5/01/05	---	5.7	36.1	34.1
LOOKOUT SNOTEL	5140	5/01/05	30	10.9	19.7	27.1
LOST HORSE MTN CAN.	6300	4/30/05	9	3.4	7.3	9.1
LOST HORSE SNOTEL	5000	5/01/05	0	.0	.0	10.1
LOST LAKE SNOTEL	6110	5/01/05	---	33.9	38.6	59.1
LOWER SANDS CREEK #2	3120	4/29/05	0	.0	16.3	15.1
LUBRECHT FOREST NO 3	5450	4/29/05	0	.0	.0	1.1
LUBRECHT FOREST NO 4	4650	4/29/05	0	.0	.0	.0
LUBRECHT FOREST NO 6	4040	4/29/05	0	.0	.0	.0
LUBRECHT HYDROPLAT	4200	4/29/05	0	.0	.0	.0
LUBRECHT SNOTEL	4680	5/01/05	0	.0	.0	.0
LYMAN LAKE SNOTEL	5900	5/01/05	---	32.0	33.9	67.1
LYNN LAKE	4000	5/03/05	0	.0	17.8	14.1
MARIAS PASS	5250	4/29/05	1	.1	2.9	12.1
MEADOWS CABIN	1900	4/28/05	0	.0	.0	1.1
MEADOWS PASS SNOTEL	3240	5/01/05	0	.0	.0	10.1
MERRITT	2140	5/01/05	0	.0	.0	4.1
M F NOOKSACK SNOTEL	4980	5/01/05	53	25.5	67.5	--
MICA CREEK SNOTEL	4750	5/01/05	0	.0	8.4	15.1
MINERAL CREEK	4000	4/30/05	0	.0	.0	9.1
MINERS RIDGE SNOTEL	6200	5/01/05	---	24.0	33.3	56.1
MISSOULA MTN CAN.	5080	5/01/05	0	.0	.2	5.1
MISSION CREEK CAN.	5840	5/01/05	---	20.0E	20.2	21.1
MONASHEE PASS CAN.	4500	4/29/05	---	.1E	.1	11.1
MORRISSEY RIDGE CAN.	6100	5/01/05	---	21.4E	15.4	27.1
MORSE LAKE SNOTEL	5400	5/01/05	---	20.3	34.2	57.1
MOSES MTN SNOTEL	4800	5/01/05	---	.1	3.1	10.1
MOSQUITO RDG SNOTEL	5200	5/01/05	---	17.3	26.9	32.1
MOULTON RESERVOIR	6850	5/01/05	1	.3E	.0	3.1
MOUNT CRAG SNOTEL	4050	5/01/05	26	10.4	22.3	27.1
MT. KOBAY CAN.	5500	4/30/05	20	6.5	8.2	12.1
MOWICH SNOTEL	3150	5/01/05	0	.0	.0	--
MOUNT GARDNER SNOTEL	2860	5/01/05	0	.0	.0	4.1
N.F. ELK CR SNOTEL	6250	5/01/05	26	8.6	2.2	8.1
NEVADA RIDGE SNOTEL	7020	5/01/05	30	10.5	8.9	14.1
NEW HOZOMEEN LAKE	2800	4/28/05	0	.0	.0	3.1
NEZ PERCE CMP SNOTEL	5650	5/01/05	14	4.9	4.6	10.1
NEZ PERCE PASS	6570	4/29/05	14	4.5	5.5	14.1
NOISY BASIN SNOTEL	6040	5/01/05	78	32.0	34.2	43.1
NORTH FORK JOCKO	6330	4/26/05	71	31.7	27.0	--
OLALLIE MDWS SNOTEL	3960	5/01/05	23	11.6	34.0	55.1
OPHIR PARK	7150	5/01/05	27	9.9	5.0	16.1
PARADISE PARK SNOTEL	5500	5/01/05	---	33.7	73.1	74.1
PARK CK RIDGE SNOTEL	4600	5/01/05	6	2.5	19.0	39.1
PETERSON MDW SNOTEL	7200	5/01/05	28	8.7	7.6	11.1
PIGTAIL PEAK SNOTEL	5900	5/01/05	53	21.9	54.3	56.1
PIKE CREEK SNOTEL	5930	5/01/05	33	12.3	11.0	25.1
PIPESTONE PASS	7200	4/27/05	10	2.5	.7	4.1
POPE RIDGE SNOTEL	3540	5/01/05	0	.0	.0	7.1
POSTILL LAKE CAN.	4200	4/30/05	8	3.2	2.8	5.1
POTATO HILL SNOTEL	4500	5/01/05	0	.0	15.3	18.1
QUARTZ PEAK SNOTEL	4700	5/01/05	0	.0	6.5	14.1
RAGGED RIDGE	3330	4/28/05	0	.0	.0	--
RAINY PASS SNOTEL	4780	5/01/05	31	13.0	23.6	43.1
REX RIVER SNOTEL	1900	5/01/05	---	.0	5.7	19.1
ROCK PEAK SNOTEL	8000	5/01/05	41	12.4	14.5	16.1
ROUND TOP MTN	4020	4/28/05	0	.0	.0	--
SADDLE MTN SNOTEL	7900	5/01/05	47	15.7	19.5	26.1
SALMON MDWS SNOTEL	4500	5/01/05	0	.0	.0	3.1
SASSE RIDGE SNOTEL	4200	5/01/05	---	8.8	18.9	32.1
SAVAGE PASS SNOTEL	6170	5/01/05	39	14.3	14.8	25.1
SAWMILL RIDGE	4700	5/03/05	0	.0	14.9	32.1
SENTINEL BT SNOTEL	4920	5/01/05	0	.0	.0	--
SHEEP CANYON SNOTEL	4050	5/01/05	---	1.1	27.1	32.1
SHERWIN SNOTEL	3200	5/01/05	0	.0	.0	3.1
SILVER STAR MTN CAN.	5600	4/30/05	56	25.0	22.2	30.1
SKALKAHO SNOTEL	7260	5/01/05	39	13.0	17.6	25.1
SKITWISE RIDGE	5110	4/29/05	7	2.6	23.8	25.1
SKOOKUM CREEK SNOTEL	3920	5/01/05	0	.0	.4	14.1
SLIDE ROCK MOUNTAIN	7100	4/28/05	35	10.0	9.6	15.1
SOURDOUGH GULCH SNTL	4000	5/01/05	0	.0	.0	--
SPENCER MDW SNOTEL	3400	5/01/05	0	.0	14.8	21.1
SPIRIT LAKE SNOTEL	3100	5/01/05	0	.0	.0	--
SPOTTED BEAR MTN.	7000	4/25/05	0	.0	.0	7.1
SPRUCE SPRINGS SNTL	5700	5/01/05	0	.0	.0	--
STAHL PEAK SNOTEL	6030	5/01/05	74	29.6	30.0	37.1
STAMPEDE PASS SNOTEL	3860	5/01/05	---	3.5	27.5	42.1
STEMPLE PASS	6600	4/28/05	16	4.6	3.2	9.1
STEVENS PASS SNOTEL	4070	5/01/05	6	2.2	14.5	35.1
STEVENS PASS SAND SD	3700	5/01/05	0	.0	9.8	27.1
STORM LAKE	7780	4/28/05	35	10.4	10.0	14.1
STRYKER BASIN	6180	4/26/05	62	21.8	26.6	32.1
SUMMERLAND RES CAN.	4200	4/28/05	0	.0	.1	5.1
SUNSET SNOTEL	5540	5/01/05	---	8.3	9.8	28.1
SURPRISE LKS SNOTEL	4250	5/01/05	---	7.2	36.8	41.1

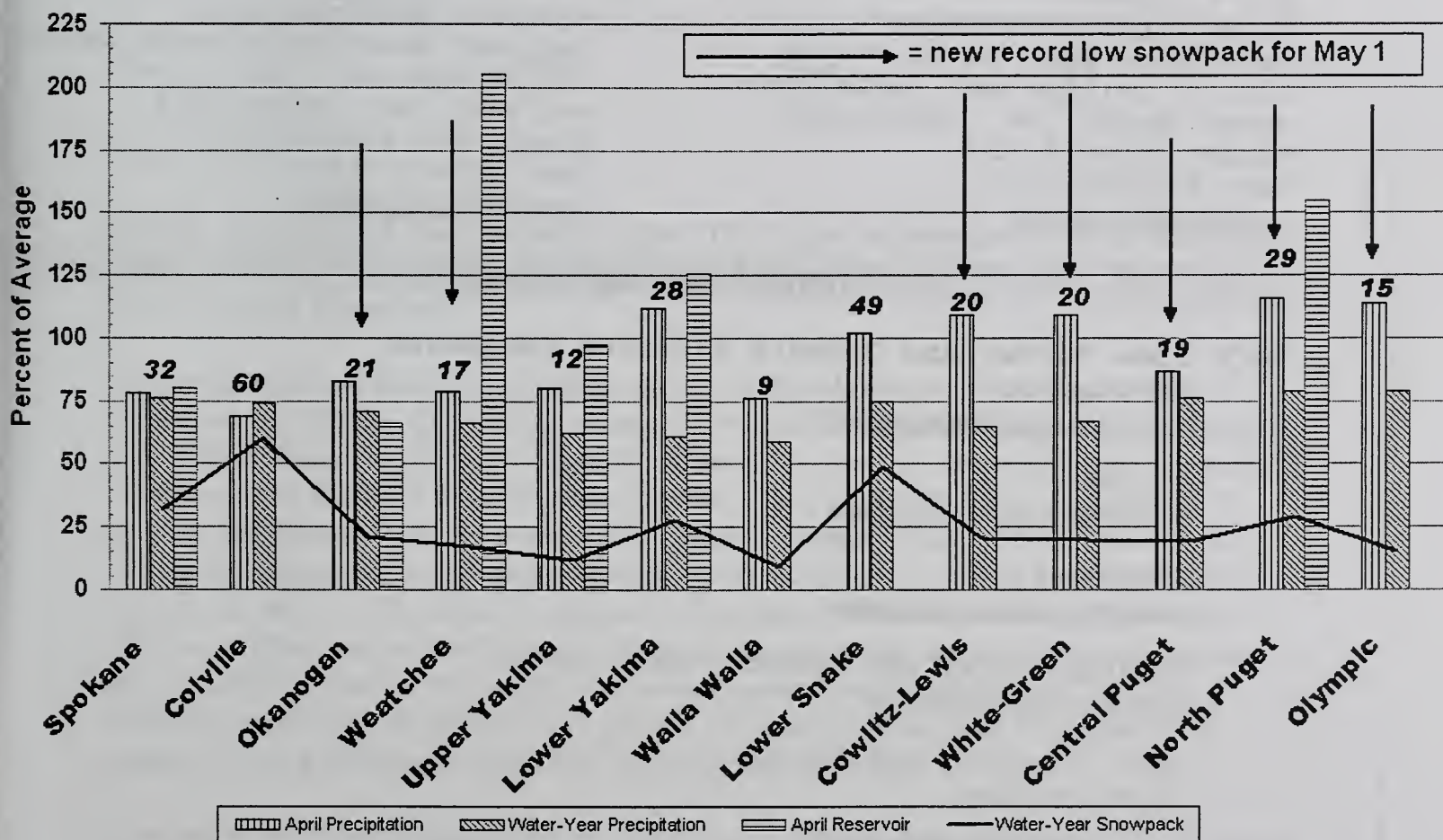


SNOW COURSE	ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 1971-00
SWAMP CREEK SNOTEL	4000	5/01/05	0	.0	.0	--
TEN MILE LOWER	6600	4/28/05	12	2.7	.0	4.5
TEN MILE MIDDLE	6800	4/28/05	29	7.6	6.3	11.2
THUNDER BASIN SNOTEL	4200	5/01/05	---	11.2	13.4	27.4
THUNDER BASIN	4200	4/28/05	12	2.8	12.0	21.2
THOMPSON CREEK	2500	4/28/05	0	.0	.0	--
TINKHAM CREEK SNOTEL	3000	5/01/05	0	.0	10.7	20.0
TOUCHET SNOTEL	5530	5/01/05	14	3.7	17.7	26.2
TRINKUS LAKE	6100	4/25/05	77	32.7	31.0	40.8
TROUGH #2 SNOTEL	5310	5/01/05	0	.0	.0	4.3
TROUT CREEK CAN.	5650	4/27/05	0	.0	.0	3.7
TRUMAN CREEK	4060	4/26/05	0	.0	.0	.1
TUNNEL AVENUE	2450	5/01/05	0	.0E	.0	12.0

SNOW COURSE	ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 1971-00
TV MOUNTAIN	6800	4/26/05	36	13.2	9.0	17.4
TWELVEMILE SNOTEL	5600	5/01/05	0	.0	.0	8.8
TWIN CAMP	4100	5/03/05	0	.0	11.4	20.3
TWIN CREEKS	3580	4/25/05	0	.0	.0	1.7
TWIN LAKES SNOTEL	6400	5/01/05	55	22.7	28.6	38.5
UPPER HOLLAND LAKE	6200	4/25/05	61	23.1	26.8	33.5
UPPER WHEELER SNOTEL	4400	5/01/05	0	.0	5.4	6.3
VASEUX CREEK CAN.	4250	5/02/05	0	.0	.0	2.3
WARM SPRINGS SNOTEL	7800	5/01/05	50	15.3	20.7	23.7
WATERHOLE SNOTEL	5000	5/01/05	16	8.3	20.2	--
WEASEL DIVIDE	5450	5/04/05	47	17.9	21.7	32.7
WELLS CREEK SNOTEL	4200	5/01/05	---	16.1	21.3	--
WHITE PASS ES SNOTEL	4500	5/01/05	0	.0	13.0	21.4
WHITE ROCKS MTN CAN.	7200	4/29/05	25	9.7	14.8	21.0

NRCS Natural Resources  
Conservation Service

# May 1, 2005 - Snowpack, Precipitation and Reservoir Conditions at a Glance (Water Year = October 1, 2004 - Current Date)





Natural Resources Conservation Service

Washington State  
Snow, Water and Climate Services

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### Helpful Internet Addresses

#### NRCS Snow Survey and Climate Services Homepages

Washington:

<http://www.wa.nrcs.usda.gov/snow>

Oregon:

<http://www.or.nrcs.usda.gov/snow>

Idaho:

<http://www.id.nrcs.usda.gov/snow>

National Water and Climate Center (NWCC):

<http://www.wcc.nrcs.usda.gov>

NWCC Anonymous FTP Server:

<ftp.wcc.nrcs.usda.gov>

#### USDA-NRCS Agency Homepages

Washington:

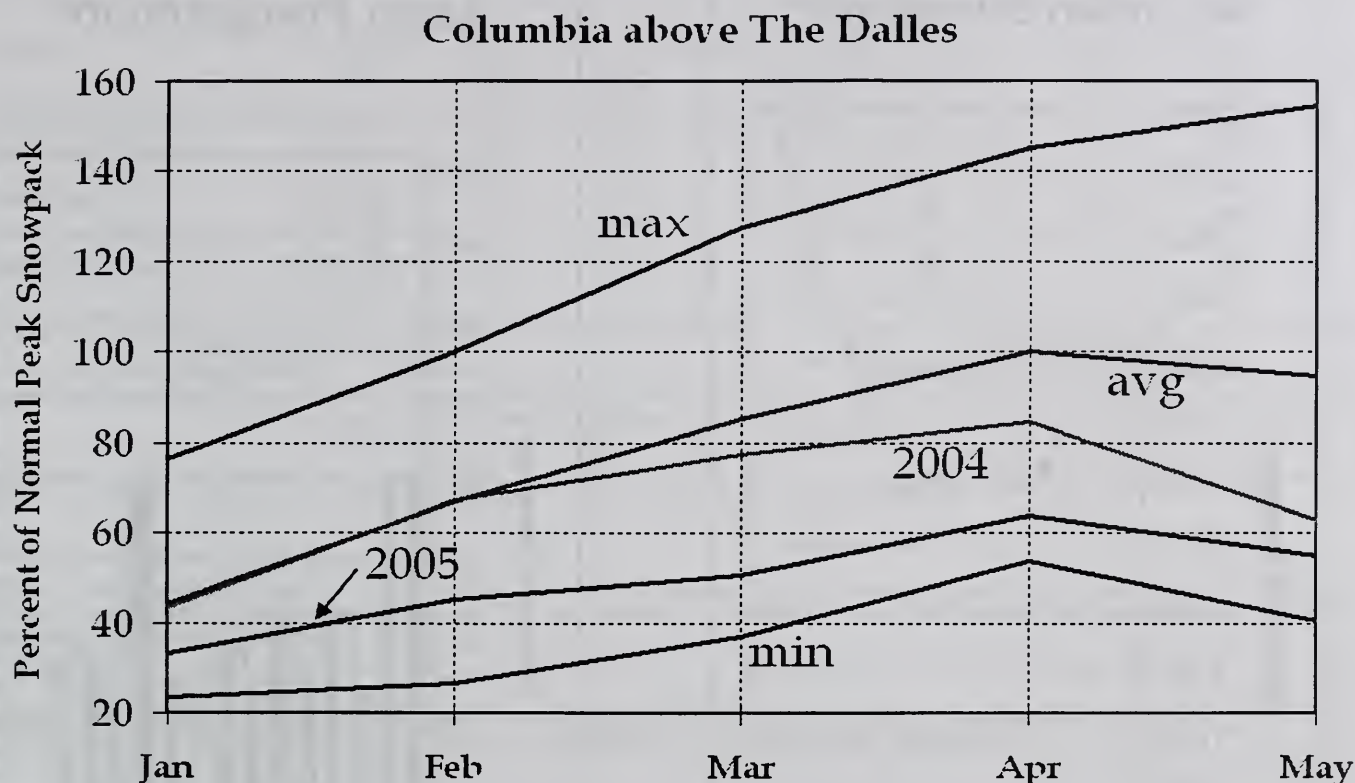
<http://www.wa.nrcs.usda.gov/nrcs>

NRCS National:

<http://www.nrcs.usda.gov>



# Columbia Basin Snowpack Summary



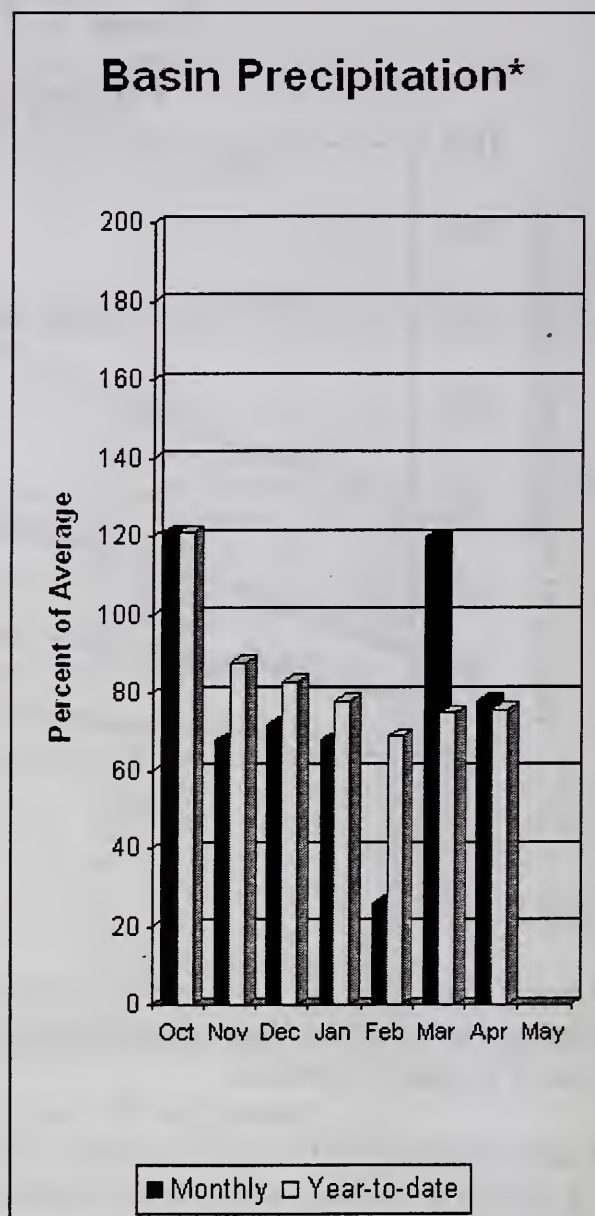
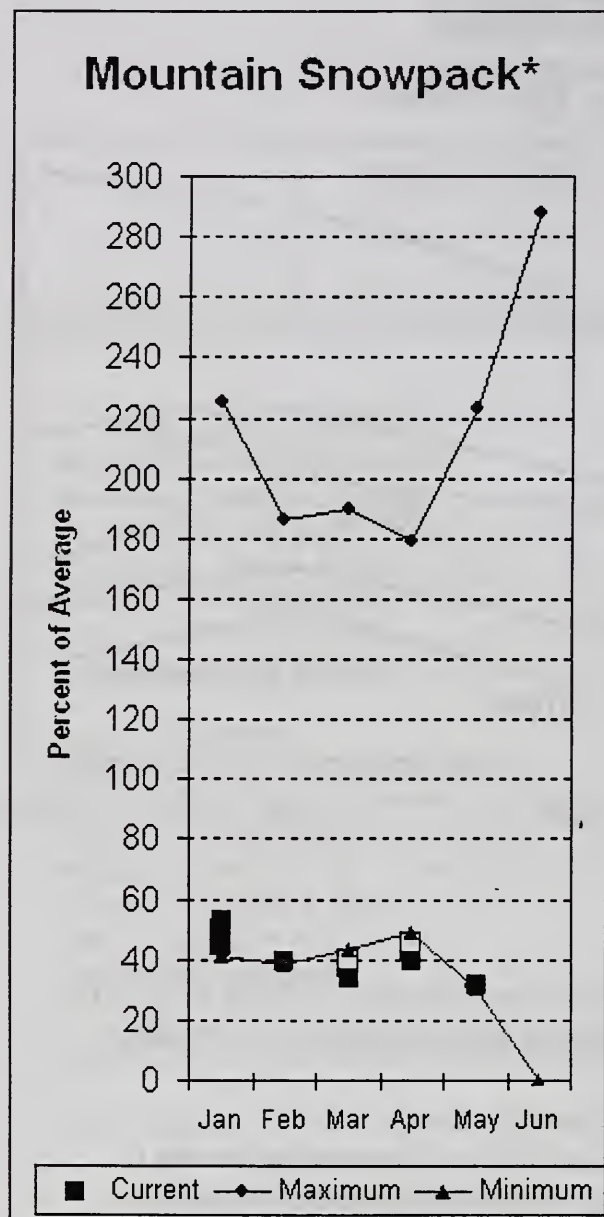
May 1, 2005

Overall, the Columbia Basin snowpack above The Dalles has decreased from 64 percent of average last month to 58 percent on May 1. The percent of peak snowpack at The Dalles was 55 percent of average.

Except for the Pend Oreille River Basin, which increased from 61 percent last month to 62 percent this month, all sub-basin snowpacks within the Columbia Basin declined from the average value from one month ago. The Canadian snowpack decreased from 81 percent to 77 percent, the Kootenai from 62 percent to 48 percent, the Kettle from 73 percent to 52 percent, the Spokane from 45 percent to 41 percent. Looking at the Mid-Columbia region, the North Cascades declined from 42 percent to 31 percent, the Yakima from 32 percent to 21 percent, the John Day from 33 percent to 5 percent, the Deschutes from 51 percent to 47 percent. Changing to the Snake, the Upper Snake snowpack decreased from 79 percent last month to 73 percent this month, the Boise/Payette from 66 percent to 62 percent, Eastern Oregon from 50 percent to 47 percent, the Salmon River from 59 percent to 55 percent, and the Clearwater Basin from 55 percent to 54 percent.

Looking at the major Columbia River regions, the snowpack above Castlegar is at 65 percent of average, compared to 73 percent last month and 71 percent last year. The snowpack above Grand Coulee is at 63 percent of average, compared to 69 percent last month and 70 percent last year. The snowpack above Ice Harbor on the Snake is at 58 percent of average, compared to 61 percent last month and 60 percent last year.

# Spokane River Basin



\*Based on selected stations

The May 1 forecasts for summer runoff within the Spokane River Basin are 43% of average near Post Falls and 51% at Long Lake. The Chamokane River near Long Lake forecasted to have 41% of average flows for the May-August period. The forecast is based on a basin snowpack that is 32% of average and precipitation that is 76% of average for the water year. Precipitation for April was below normal at 78% of average. Streamflow on the Spokane River at Long Lake was 70% of average for April. May 1 storage in Coeur d'Alene Lake was 199,000-acre feet, 80% of average and 83% of capacity. Snowpack at Quartz Peak SNOTEL site melted out over a month early, the earliest since records began in 1988. Average temperatures in the Spokane basin were 3 degree above normal April and 2 degrees above for the water year.

For more information contact your local Natural Resources Conservation Service office.



# Spokane River Basin

## SPOKANE RIVER BASIN Streamflow Forecasts - May 1, 2005

Forecast Point	Forecast Period	<===== Drier ===== Future Conditions ===== Wetter =====>						30-Yr Avg. (1000AF)
		Chance Of Exceeding *						
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
SPOKANE near Post Falls (2)	MAY-SEP	581	688	760	43	925	1165	1770
	MAY-JUL	536	637	705	42	865	1095	1670
SPOKANE at Long Lake (2)	MAY-JUL	701	831	920	48	1100	1370	1910
	MAY-SEP	836	981	1080	51	1270	1550	2130
CHAMOKANE CREEK near Long Lake	MAY-AUG	2.7	3.6	4.2	41	5.7	7.8	10.2
	JUL-AUG	1.9	2.0	2.1	60	2.3	2.5	3.5

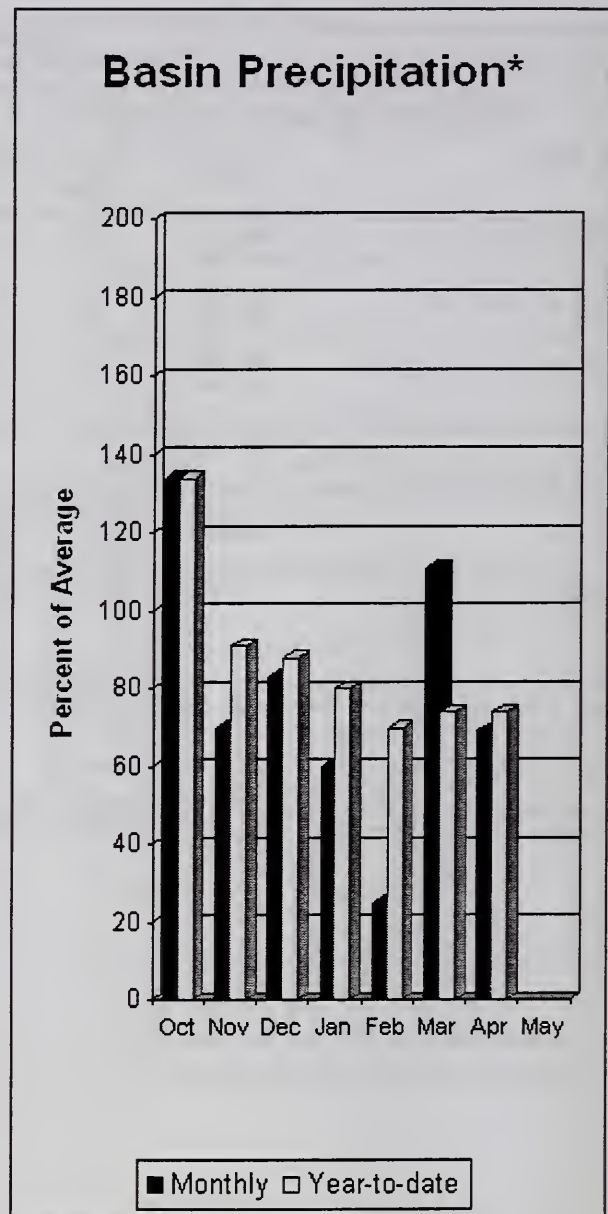
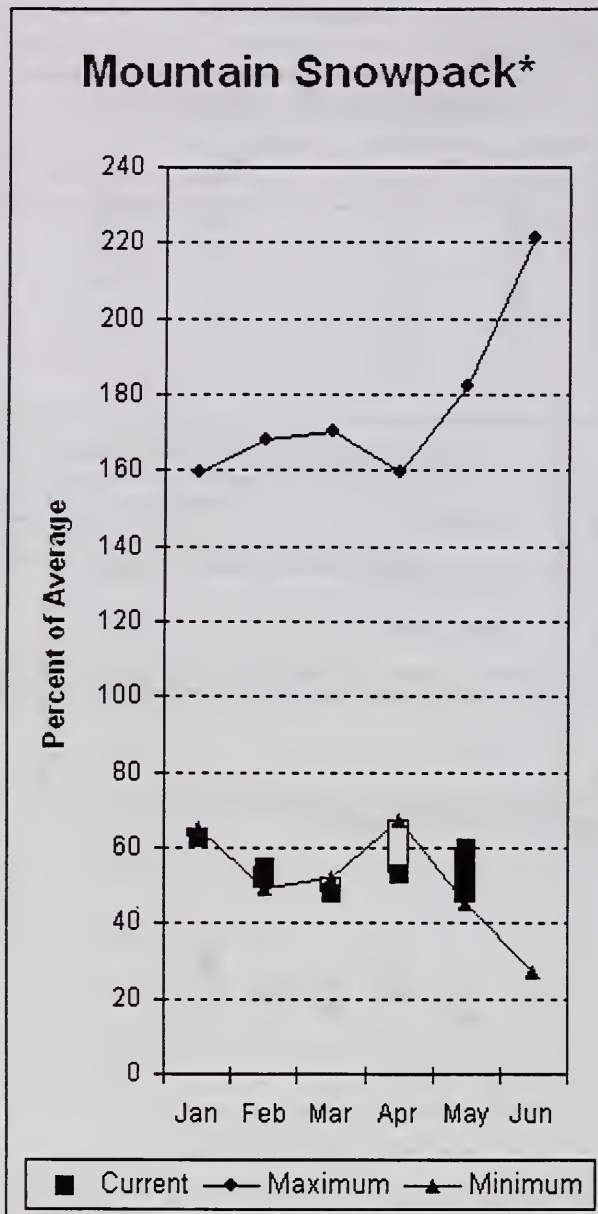
SPOKANE RIVER BASIN Reservoir Storage (1000 AF) - End of April					SPOKANE RIVER BASIN Watershed Snowpack Analysis - May 1, 2005		
Reservoir	Usable Capacity	*** This Year	Usable Last Year	Storage *** Avg	Watershed	Number of Data Sites	This Year as % of Last Yr Average
COEUR D'ALENE	238.5	198.9	156.5	249.7	SPOKANE RIVER	11	48 32
					NEWMAN LAKE	1	0 0

\* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.  
 (2) - The value is natural volume - actual volume may be affected by upstream water management.

## Colville - Pend Oreille River Basins



\*Based on selected stations

The May – September average forecast for the Kettle River streamflow is 98%, Colville at Kettle Falls is 32%, and Priest River near the town of Priest River is 60%. April streamflow was 71% of average on the Pend Oreille River, 104% on the Columbia at the International Boundary and 128% on the Kettle River. May 1 snow cover was 56% of average in the Pend Oreille Basin River Basin and 64% in the Kettle River Basin (including Canadian data). Bunchgrass Meadows SNOTEL site had 15.4 inches of snow water on the snow pillow. Normally Bunchgrass would have 28.6 inches on May 1. Precipitation during April was 69% of average, bringing the year-to-date precipitation to 74% of average. Average temperatures were 3-4 degrees above normal for April and 2-3 degrees above for the water year.

For more information contact your local Natural Resources Conservation Service office.



# Colville - Pend Oreille River Basins

## Streamflow Forecasts - May 1, 2005

Forecast Point	Forecast Period	<===== Drier ===== Future Conditions ===== Wetter =====>						30-Yr Avg. (1000AF)
		Chance Of Exceeding *						
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
PEND OREILLE Lake Inflow (2)	MAY-JUL	4870	5770	6380	60	6990	7890	10600
	MAY-SEP	5440	6440	7120	60	7800	8800	11800
PRIEST near Priest River (1,2)	MAY-JUL	260	335	370	60	405	480	615
	MAY-SEP	270	365	405	60	445	540	670
PEND OREILLE bl Box Canyon (2)	MAY-JUL	4780	5900	6660	62	7420	8540	10700
	MAY-SEP	5480	6630	7410	62	8190	9340	11900
COLVILLE at Kettle Falls	MAY-SEP	22	26	29	32	39	55	92
	MAY-JUL	18.5	22	24	30	33	46	79
KETTLE near Laurier	MAY-SEP	1340	1500	1610	98	1720	1880	1640
	MAY-JUL	1280	1420	1510	98	1600	1740	1540
COLUMBIA at Birchbank (1,2)	MAY-JUL	21932	24179	25200	80	26220	28470	31600
	MAY-SEP	28236	31099	32400	81	33700	36560	40200
COLUMBIA at Grand Coulee Dm (1,2)	MAY-SEP	37923	42102	44000	78	45900	50080	56700
	MAY-JUL	30613	34042	35600	76	37160	40590	46600

### COLVILLE - PEND OREILLE RIVER BASINS Reservoir Storage (1000 AF) - End of April

### COLVILLE - PEND OREILLE RIVER BASINS Watershed Snowpack Analysis - May 1, 2005

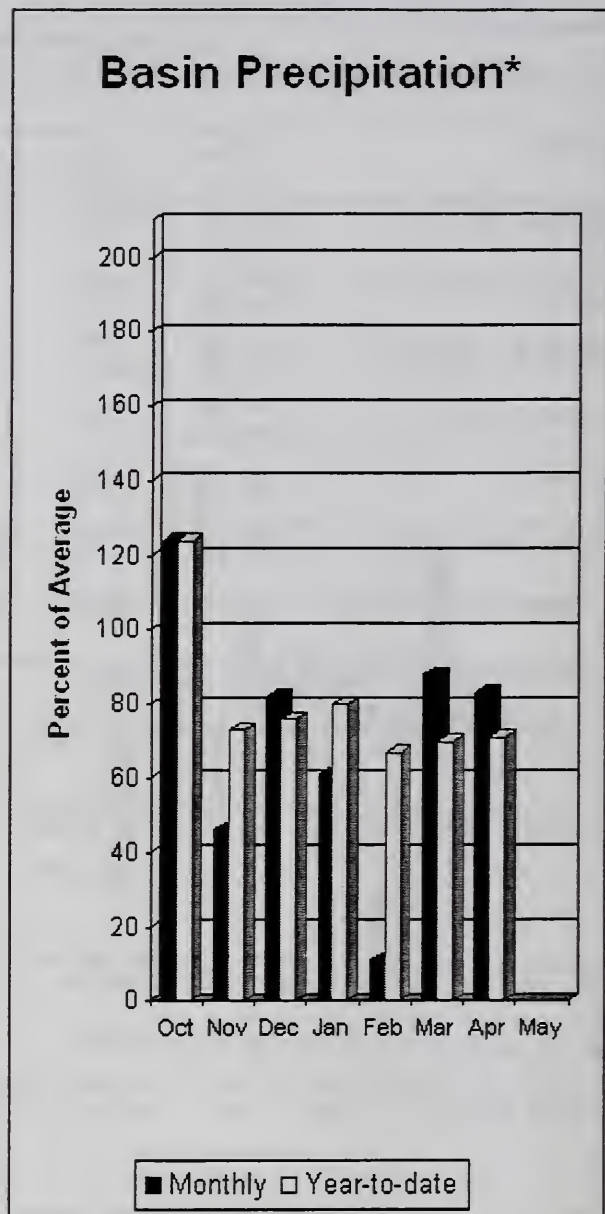
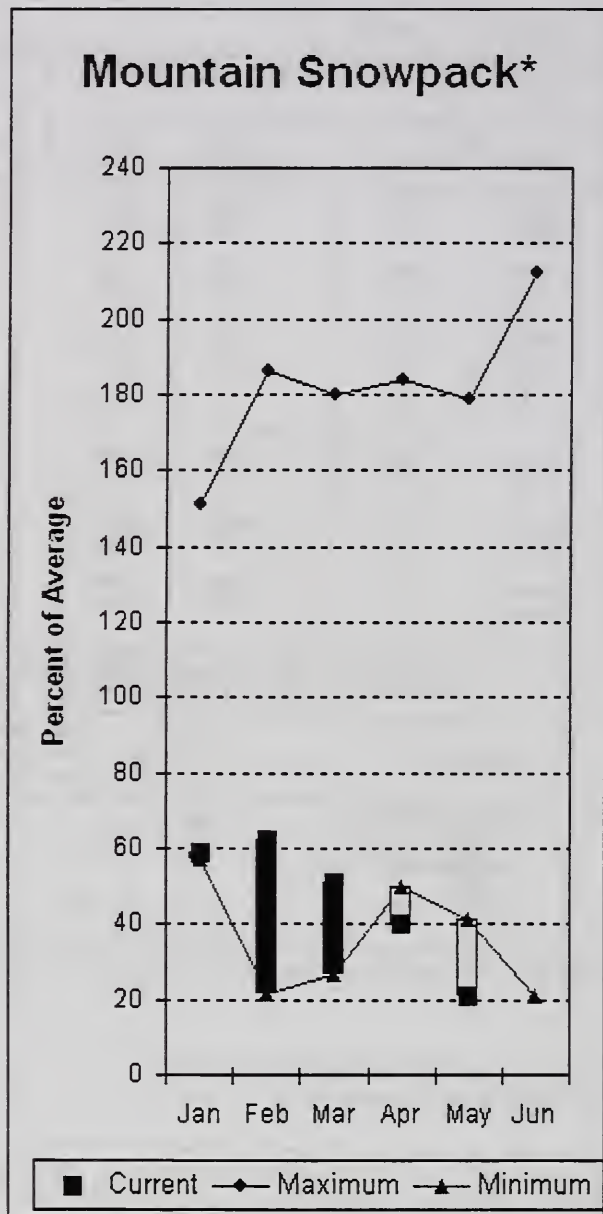
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
ROOSEVELT		NO REPORT			COLVILLE RIVER	0	0	0
BANKS		NO REPORT			PEND OREILLE RIVER	10	82	46
					KETTLE RIVER	6	116	64

\* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.  
 (2) - The value is natural volume - actual volume may be affected by upstream water management.

# Okanogan - Methow River Basins



\*Based on selected stations

Summer runoff average forecast for the Okanogan River at Malott is 57%, Methow River is 43% and Salmon Creek is 45%. The Similkameen River is forecasted at 51% of normal flows. May 1 snow cover on the Okanogan was 44% of average, Omak Creek was melted out and the Methow was 28%, overall setting a new low May 1 snowpack record. April precipitation in the Okanogan-Methow was 83% of average, with precipitation for the water year at 71% of average. April streamflow for the Methow River was 70% of average, 92% for the Okanogan River and 100% for the Similkameen. Salmon Meadows SNOTEL had melted out it's snow a month early. Average for this site is 3.9 inches on May 1. Combined storage in the Conconully Reservoirs was 13,000-acre feet, which is 54% of capacity and 66% of the May 1 average. Temperatures were 1-2 degrees above normal for April and 2 degrees above normal for the water year.

*For more information contact your local Natural Resources Conservation Service office.*



# Okanogan - Methow River Basins

## Streamflow Forecasts - May 1, 2005

Forecast Point	Forecast Period	<===== Drier ===== Future Conditions ===== Wetter =====>						30-Yr Avg (1000AF)
		Chance Of Exceeding *						
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
SIMILKAMEEN near Nighthawk (1)	MAY-JUL	340	535	620	51	705	900	1220
	MAY-SEP	390	585	675	51	765	965	1320
OKANOGAN near Tonasket (1)	MAY-JUL	260	600	750	54	900	1240	1400
	MAY-SEP	320	680	850	54	1020	1380	1590
OKANOGAN at Malott (1)	MAY-JUL	325	670	830	57	990	1340	1449
	MAY-SEP	390	770	940	57	1110	1490	1641
Salmon Creek nr Conconully	MAY-JUL	2.7	5.3	7.5	45	10.1	14.7	16.6
	MAY-SEP	2.7	5.5	7.9	45	10.8	15.8	17.6
TOATS COULEE CREEK nr Loomis	MAY-JUL	9.3	12.9	15.4	57	19.8	26	27
	MAY-SEP	10.3	13.7	16.0	57	20	26	28
Beaver Creek blw SF nr Twisp	MAY-SEP	1.7	4.0	5.6	50	7.2	9.6	11.2
	MAY-JUL	1.5	3.8	5.4	54	7.0	9.3	10.1
METHOW RIVER near Pateros	MAY-SEP	275	335	380	43	425	485	880
	MAY-JUL	285	340	380	47	420	475	810

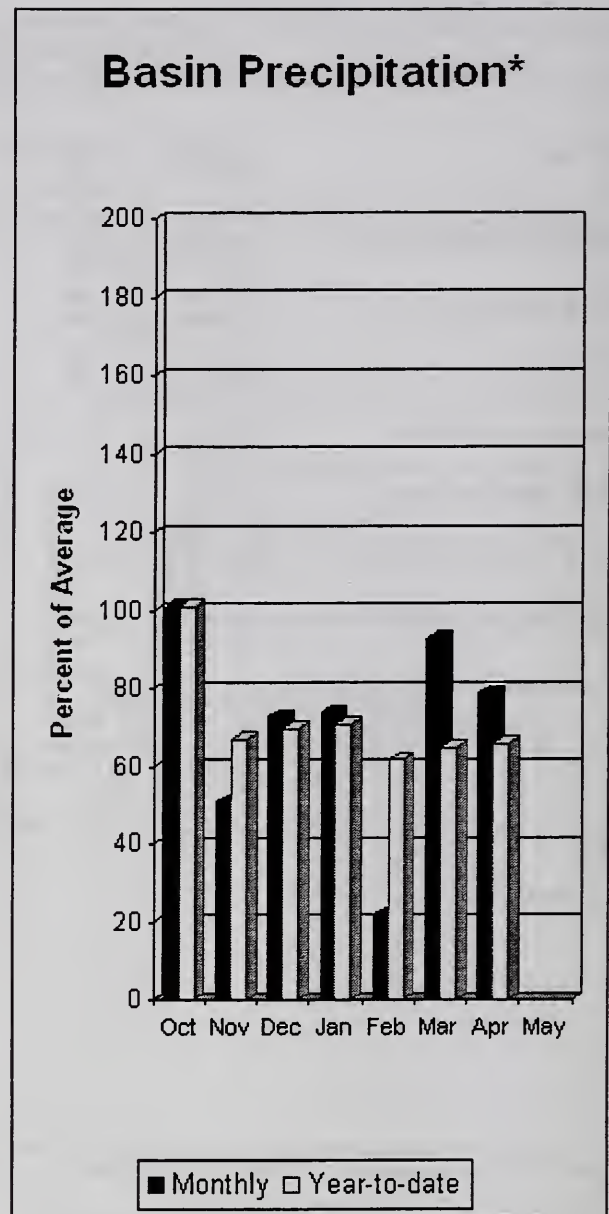
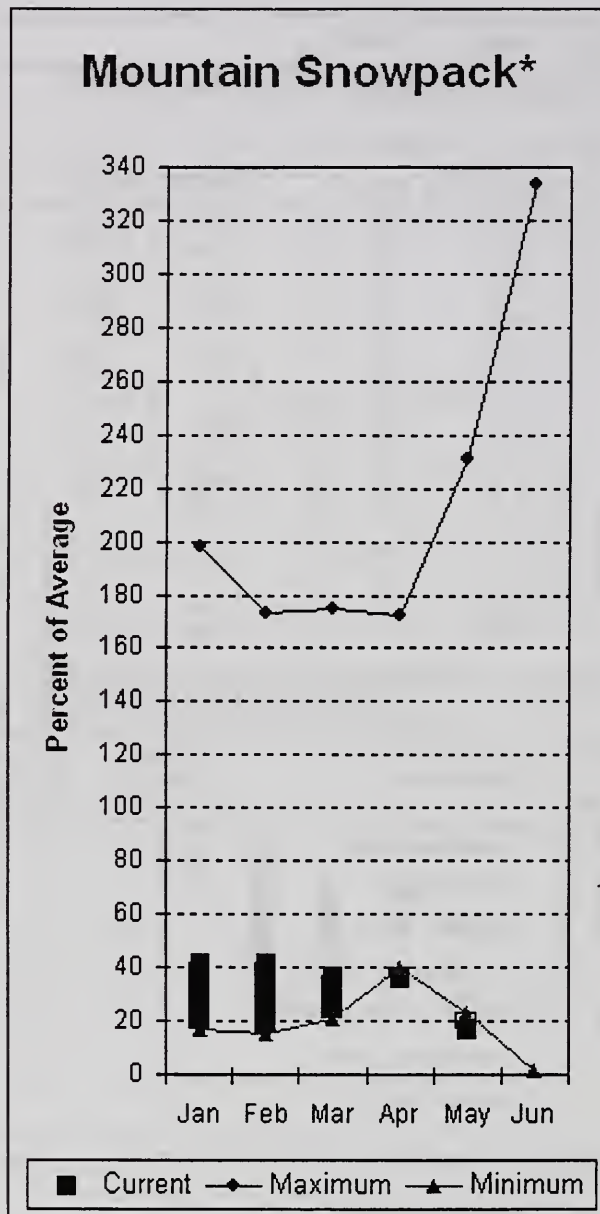
OKANOGAN - METHOW RIVER BASINS Reservoir Storage (1000 AF) - End of April					OKANOGAN - METHOW RIVER BASINS Watershed Snowpack Analysis - May 1, 2005			
Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg	Watershed	Number of Data Sites	This Year as % of Last Yr	Average
SALMON LAKE	10.5	6.2	---	8.9	OKANOGAN RIVER	18	79	44
CONCONULLY RESERVOIR	13.0	6.4	---	10.1	OMAK CREEK	1	3	1
					SANPOIL RIVER	0	0	0
					SIMILKAMEEN RIVER	4	36	11
					TOATS COULEE CREEK	0	0	0
					CONCONULLY LAKE	1	0	0
					METHOW RIVER	3	51	28

\* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.  
 (2) - The value is natural volume - actual volume may be affected by upstream water management.

# Wenatchee - Chelan River Basins



\*Based on selected stations

Precipitation during April was 79% of average in the basin and 66% for the year-to-date. Runoff for Entiat River is forecast to be 45% of average for the summer. The May-September average forecast for Chelan River is 52%, Wenatchee River at Plain is 48%, Stehekin River is 55% and Icicle Creek is 53%. Stemilt and Squilchuck creeks are all forecasted to have below average flows this year as well. April average streamflows on the Chelan River were 76% and on the Wenatchee River 68%. May 1 snowpack in the Wenatchee River Basin was 17% of average; the Chelan, 35%; the Entiat, 0%; Stemilt Creek, 0% and Colockum Creek, 0%. Reservoir storage in Lake Chelan was 545,000-acre feet, 205% of May 1 average and 81% of capacity. Lyman Lake SNOTEL had the most snow water with 32 inches of water. This site would normally have 67.2 inches on May 1. Temperatures were 1 degrees above normal for April and 2 degrees above normal for the water year.

*For more information contact your local Natural Resources Conservation Service office.*



# Wenatchee - Chelan River Basins

## Streamflow Forecasts - May 1, 2005

		<===== Drier ===== Future Conditions ===== Wetter =====>						
Forecast Point	Forecast Period	Chance Of Exceeding *						30-Yr Avg. (1000AF)
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
=====								
CHELAN RIVER near Chelan	MAY-SEP	435	500	545	52	590	655	1050
	MAY-JUL	370	435	475	52	515	580	910
STEHEKIN near STEHEKIN	MAY-SEP	368	393	410	55	440	490	745
	MAY-JUL	265	310	340	55	370	415	620
ENTIAT RIVER nr Ardenvoir	MAY-SEP	78	89	96	45	103	114	215
	MAY-JUL	71	81	88	45	95	105	195
WENATCHEE at Plain	MAY-SEP	375	450	500	48	550	625	1035
	MAY-JUL	365	420	460	50	500	555	915
WENATCHEE R. at Peshastin	MAY-SEP	222	513	710	50	907	1200	1410
	MAY-JUL	190	449	625	50	801	1060	1250
STEMILT CK nr Wenatchee (miner's in)	MAY-SEP	26	47	61	44	75	96	138
ICICLE CREEK near Leavenworth	MAY-SEP	143	155	160	53	165	175	305
	MAY-JUL	123	137	147	53	155	170	280
COLUMBIA R. bl Rock Island Dam (2)	MAY-SEP	41179	44764	47200	77	49640	53220	61600
	MAY-JUL	32621	36121	38500	75	40880	44380	51100

### WENATCHEE - CHELAN RIVER BASINS Reservoir Storage (1000 AF) - End of April

### WENATCHEE - CHELAN RIVER BASINS Watershed Snowpack Analysis - May 1, 2005

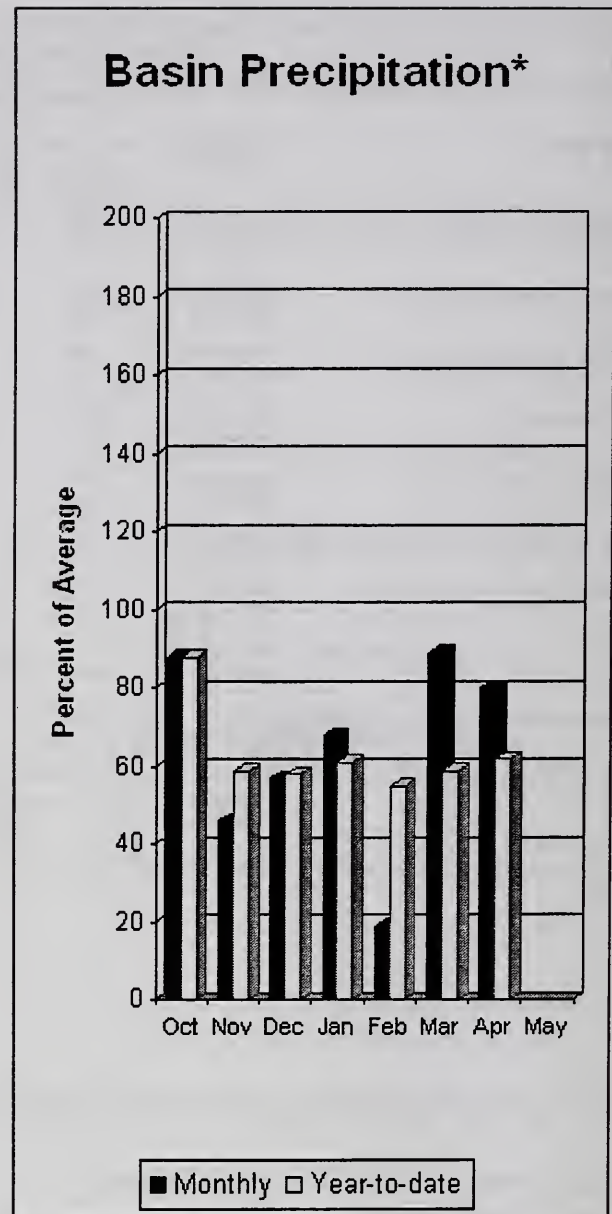
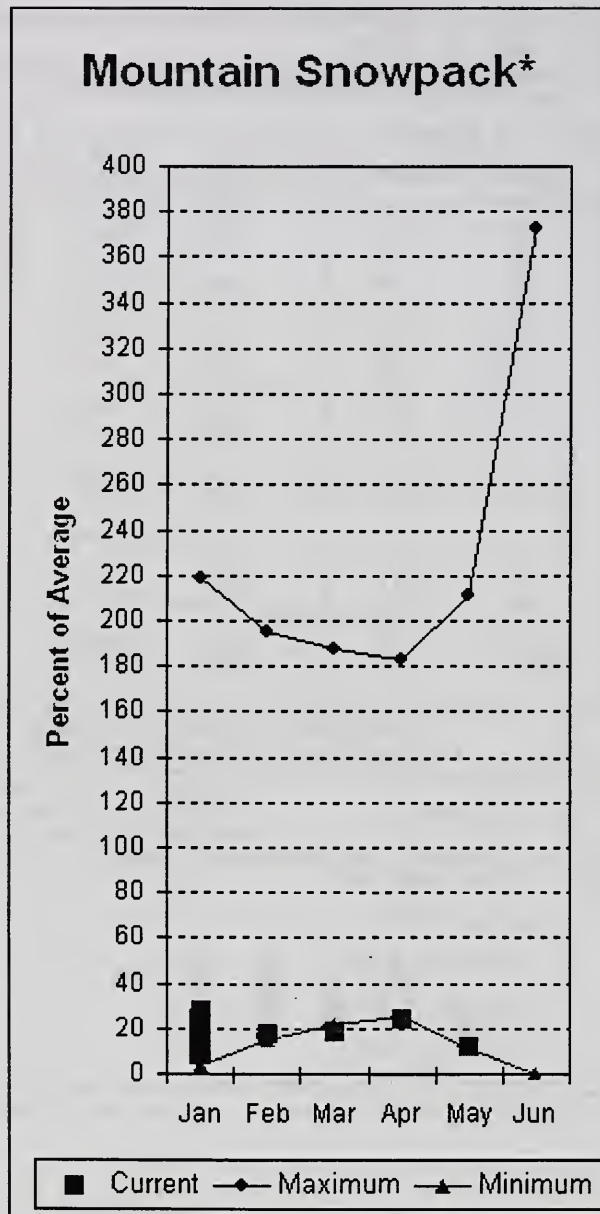
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
CHELAN LAKE	676.1	545.2	---	265.6	CHELAN LAKE BASIN	4	65	35
					ENTIAT RIVER	1	0	0
					WENATCHEE RIVER	11	70	33
					STEMILT CREEK	1	0	0
					COLOCKUM CREEK	1	0	0

\* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural volume - actual volume may be affected by upstream water management.

# Upper Yakima River Basin



\*Based on selected stations

May 1 reservoir storage for the Upper Yakima reservoirs was 603,000-acre feet, 97% of average. Forecasts for the Yakima River at Cle Elum are 39% of average and the Teanaway River near Cle Elum is at 27%. Lake inflows are all forecasted to be near that same range this summer. April streamflows within the basin were Yakima near Cle Elum at 69% and Cle Elum River near Roslyn at 76%. May 1 snowpack was 12% based upon 8 snow courses and SNOTEL readings within the Upper Yakima Basin. Precipitation was 80% of average for April and 62% year-to-date for water. Volume forecasts for the Yakima Basin are for natural flow. As such, they may differ from the U.S. Bureau of Reclamation's forecast for the total water supply available, which includes irrigation return flow.

For more information contact your local Natural Resources Conservation Service office.



# Upper Yakima River Basin

## Streamflow Forecasts - May 1, 2005

		<<===== Drier ===== Future Conditions ===== Wetter =====>>						
Forecast Point	Forecast Period	=====		Chance Of Exceeding *		=====		30-Yr Avg (1000AF)
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
=====								
KEECHELUS LAKE INFLOW	MAY-JUL	26	29	32	35	39	49	92
	MAY-SEP	28	33	36	35	44	57	103
KACHESS LAKE INFLOW	MAY-JUL	23	26	28	33	33	40	84
	MAY-SEP	25	29	31	34	37	45	92
CLE ELUM LAKE INFLOW	MAY-JUL	117	126	132	40	145	164	330
	MAY-SEP	132	143	150	40	165	190	375
YAKIMA at Cle Elum	MAY-JUL	214	232	245	39	275	315	635
	MAY-SEP	236	259	275	39	310	360	715
TEANAWAY near Cle Elum	MAY-JUL	20	23	25	28	31	40	91
	MAY-SEP	21	24	26	27	32	41	95

### UPPER YAKIMA RIVER BASIN Reservoir Storage (1000 AF) - End of April

### UPPER YAKIMA RIVER BASIN Watershed Snowpack Analysis - May 1, 2005

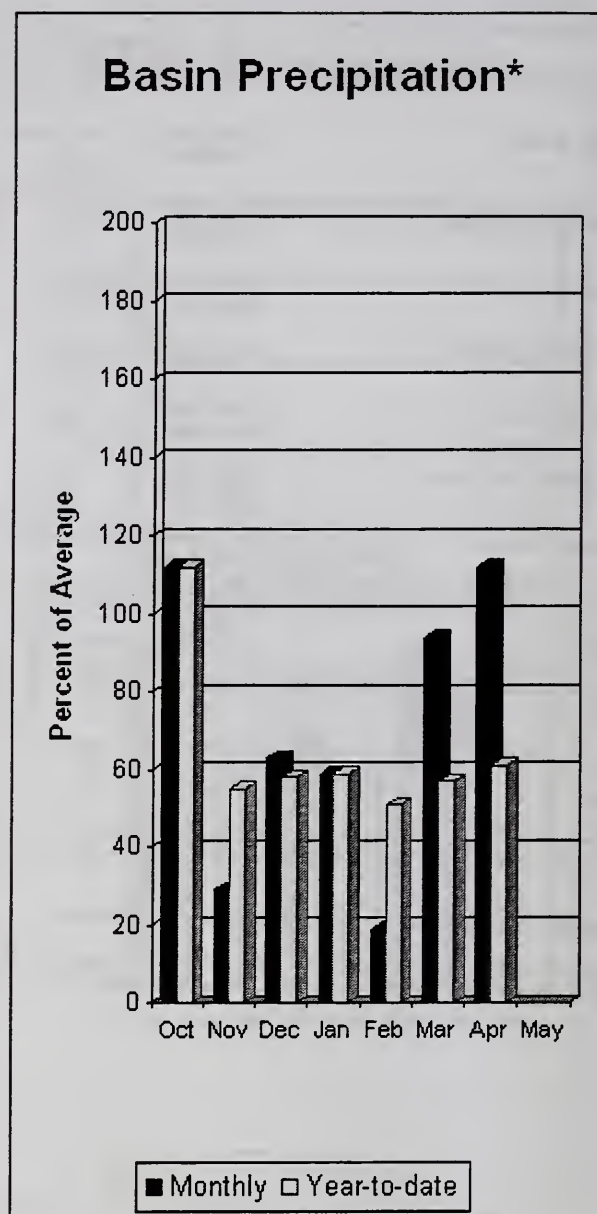
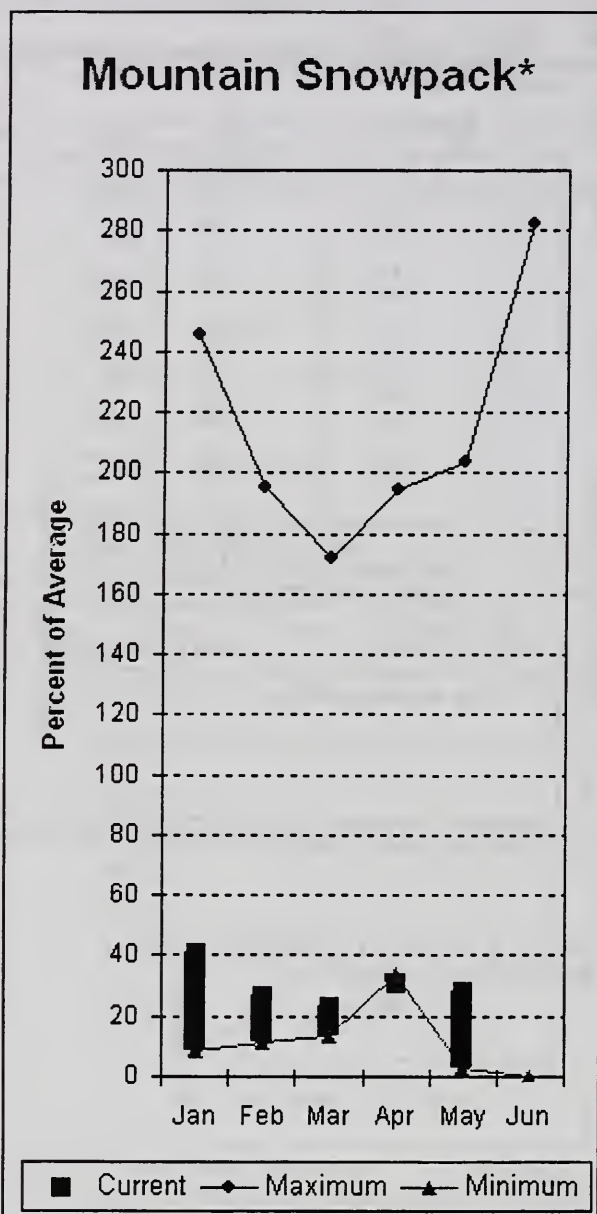
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
KEECHELUS	157.8	114.0	---	125.6	UPPER YAKIMA RIVER	8	24	12
KACHESS	239.0	158.9	---	188.3				
CLE ELUM	436.9	330.1	---	307.0				

\* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural volume - actual volume may be affected by upstream water management.

# Lower Yakima River Basin



\*Based on selected stations

April average streamflows within the basin were: Yakima River near Parker, 52%; Naches River near Naches, 57%; and Yakima River at Kiona, 35%. May 1 reservoir storage for Bumping and Rimrock reservoirs was 213,000-acre feet, 126% of average. Forecast averages for Yakima River near Parker are 32%; American River near Nile, 42%; Ahtanum Creek, 17%; and Klickitat River near Glenwood, 30%. May 1 snowpack was 28% based upon 6 snow courses and SNOTEL readings within the Lower Yakima Basin and Ahtanum Creek reported in at 18 % of average. Precipitation was 112% of average for April and 61% year-to-date for water. Temperatures were 1 degrees above normal for April and 2 degrees above average for the water year. Volume forecasts for Yakima Basin are for natural flow. As such, they May differ from the U.S. Bureau of Reclamation's forecast for the total water supply available, which includes irrigation return flow.

For more information contact your local Natural Resources Conservation Service office.



# Lower Yakima River Basin

## Streamflow Forecasts - May 1, 2005

		<===== Drier ===== Future Conditions ===== Wetter =====>						
Forecast Point	Forecast Period	=====		Chance Of Exceeding *		=====		30-Yr Avg. (1000AF)
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
BUMPING LAKE INFLOW	MAY-SEP	26	37	44	39	51	62	113
	MAY-JUL	26	34	40	39	46	54	103
AMERICAN RIVER near Nile	MAY-SEP	27	36	42	42	48	57	100
	MAY-JUL	24	32	38	42	44	52	90
RIMROCK LAKE INFLOW	MAY-SEP	73	81	86	42	97	112	205
	MAY-JUL	61	66	70	42	78	89	168
NACHES near Naches	MAY-SEP	170	225	260	38	295	350	680
	MAY-JUL	155	200	230	38	260	305	600
AHTANUM CREEK at Union Gap	MAY-SEP	2.8	3.4	3.8	17	6.3	9.9	23
	MAY-JUL	2.5	3.1	3.5	17	5.8	9.2	21
YAKIMA near Parker	MAY-SEP	412	453	480	32	550	655	1480
	MAY-JUL	358	395	420	33	485	575	1290
KLICKITAT near Glenwood	MAY-JUN	16.0	24	30	29	36	44	102
	MAY-SEP	21	32	40	30	48	59	135

### LOWER YAKIMA RIVER BASIN Reservoir Storage (1000 AF) - End of April

Reservoir	Usable Capacity	*** Usable Storage ***		
		This Year	Last Year	Avg
BUMPING LAKE	33.7	33.9	---	19.6
RIMROCK	198.0	179.3	---	149.4

### LOWER YAKIMA RIVER BASIN Watershed Snowpack Analysis - May 1, 2005

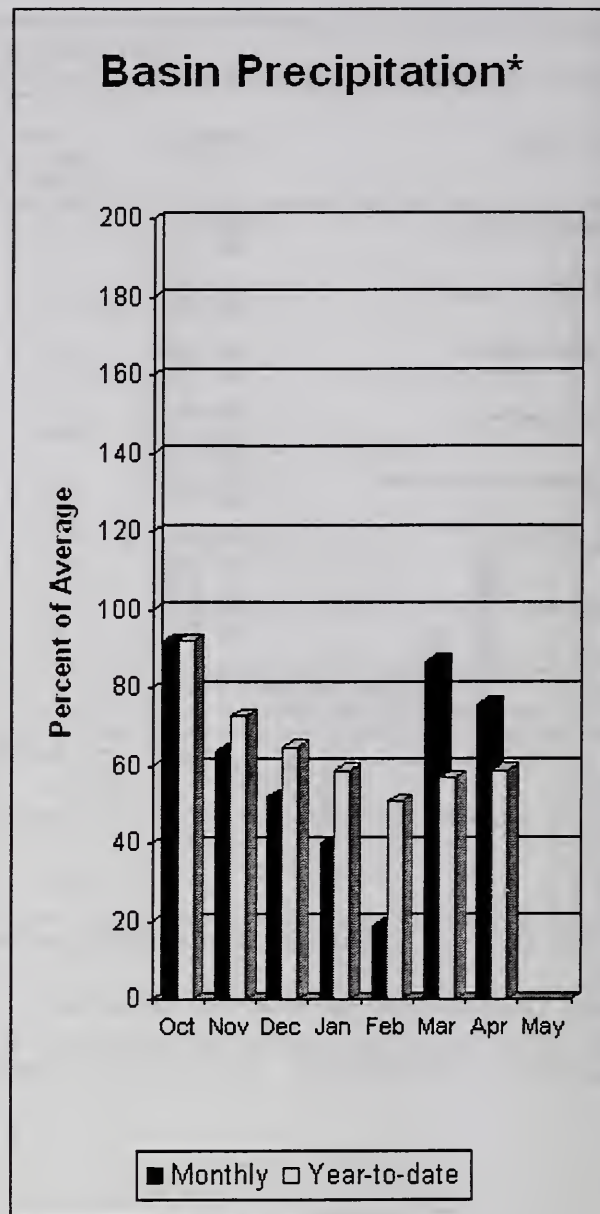
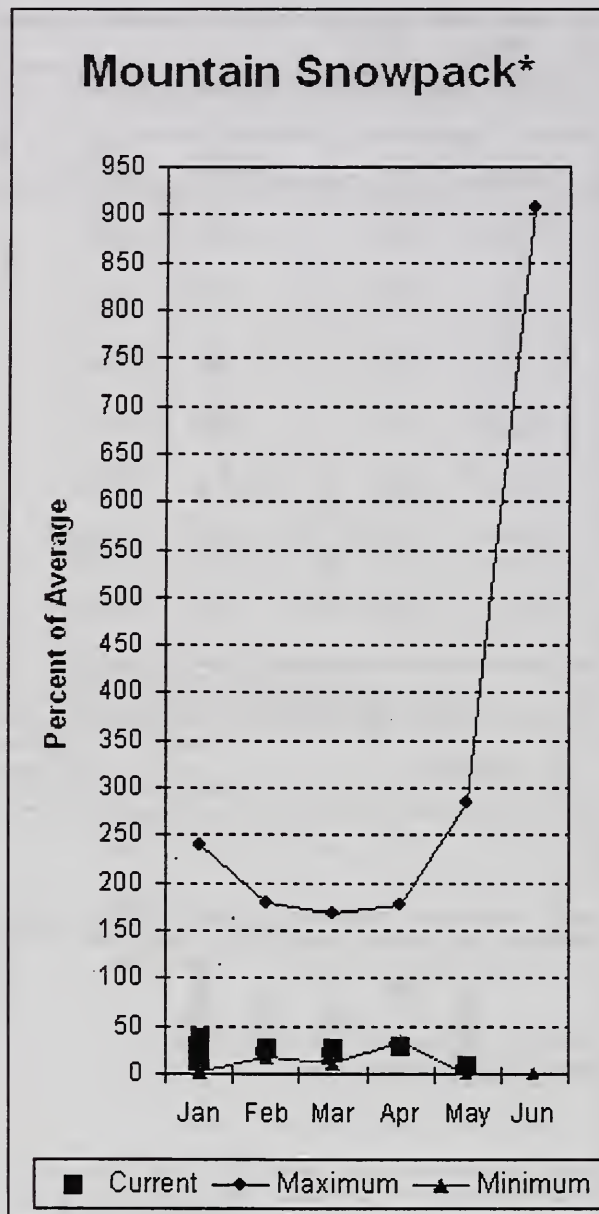
Watershed	Number of Data Sites	This Year as % of	
		Last Yr	Average

\* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural volume - actual volume may be affected by upstream water management.

# Walla Walla River Basin



\*Based on selected stations

April precipitation was 76% of average, maintaining the year-to-date precipitation at 59% of average. Snowpack in the basin was 9% of average. Streamflow forecasts are 31% of average for Mill Creek and 67% for the SF Walla Walla near Milton-Freewater. April streamflow was 91% of average for the Walla Walla River. Average temperatures were 1 degree above normal for April and 1 degree above average for the water year.

*For more information contact your local Natural Resources Conservation Service office.*



# Walla Walla River Basin

## Streamflow Forecasts - May 1, 2005

Forecast Point	Forecast Period	<===== Drier ===== Future Conditions ===== Wetter =====>						
		90%		Chance Of Exceeding *		30%		30-Yr Avg.
		(1000AF)	(1000AF)	(1000AF)	(% AVG.)	(1000AF)	(1000AF)	
MILL CREEK at Walla Walla	MAY-SEP	1.8	2.4	2.8	31	4.1	5.9	9.0
	MAY-JUL	1.8	2.3	2.7	30	4.0	5.8	8.9
SF WALLA WALLA near Milton-Freewater	MAY-JUL	19.4	23	26	68	29	33	38
	MAY-SEP	26	31	34	67	37	42	51

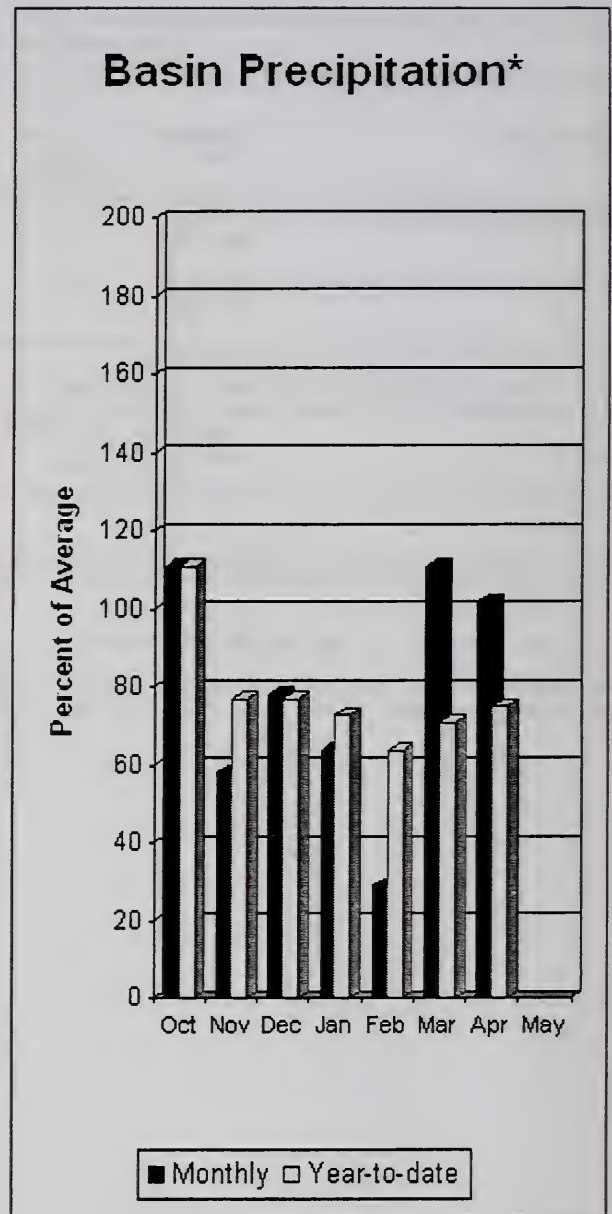
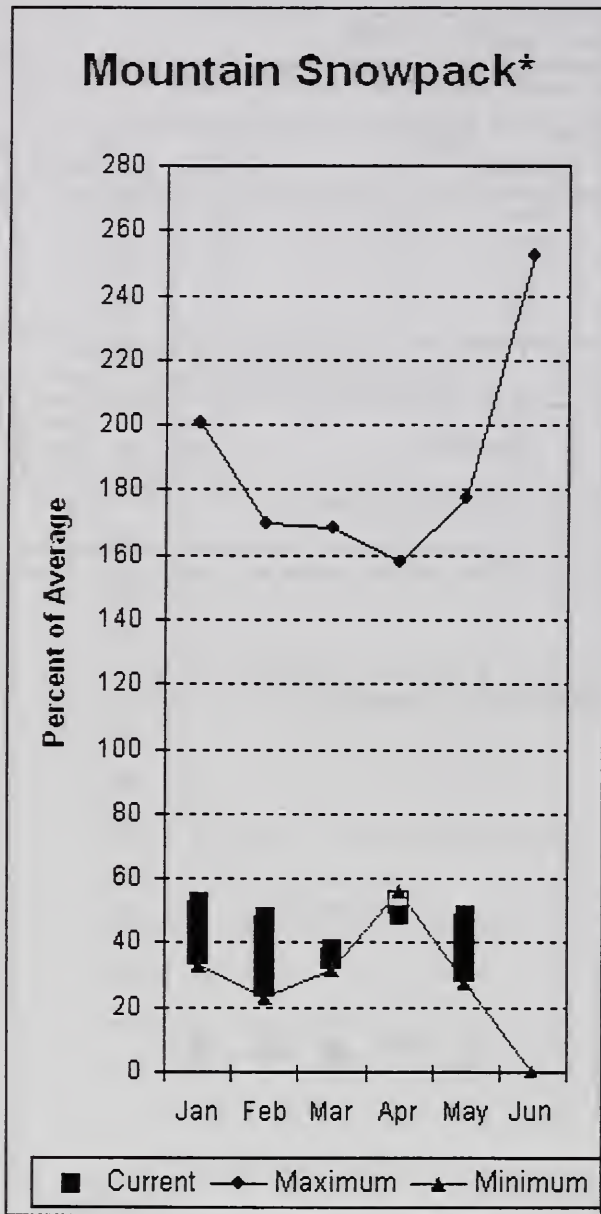
WALLA WALLA RIVER BASIN					WALLA WALLA RIVER BASIN			
Reservoir Storage (1000 AF) - End of April					Watershed Snowpack Analysis - May 1, 2005			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
					WALLA WALLA RIVER	2	13	9

\* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural volume - actual volume may be affected by upstream water management.

## Lower Snake River Basin



\*Based on selected stations

The May - September forecast is for 58% for Clearwater River at Spalding. The Snake and Grande Ronde rivers can expect summer flows to be about 54% and 56% of normal respectively. April precipitation was 102% of average, bringing the year-to-date precipitation to 75% of average. May 1 snowpack readings averaged 49% of normal. April streamflow was 57% of average for Snake River below Lower Granite Dam and 59% for Grande Ronde River near Troy. Average temperatures were 2 degrees above normal for April and 2 degrees above normal for the water year.

*For more information contact your local Natural Resources Conservation Service office.*



# Lower Snake River Basin

## Streamflow Forecasts - May 1, 2005

Forecast Point	Forecast Period	<===== Drier ===== Future Conditions ===== Wetter =====>						30-Yr Avg. (1000AF)
		Chance Of Exceeding *						
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
GRANDE RONDE at Troy (1)	MAY-JUL	266	434	510	56	586	755	910
	MAY-SEP	293	480	565	56	650	835	1010
CLEARWATER at Spalding (1,2)	MAY-JUL	2290	3030	3370	58	3710	4450	5770
	MAY-SEP	2450	3250	3610	58	3970	4770	6190
SNAKE blw Lower Granite Dam (1,2)	MAY-JUL	5760	8022	9050	54	10080	12340	16700
	MAY-SEP	6695	9312	10500	54	11690	14300	19300

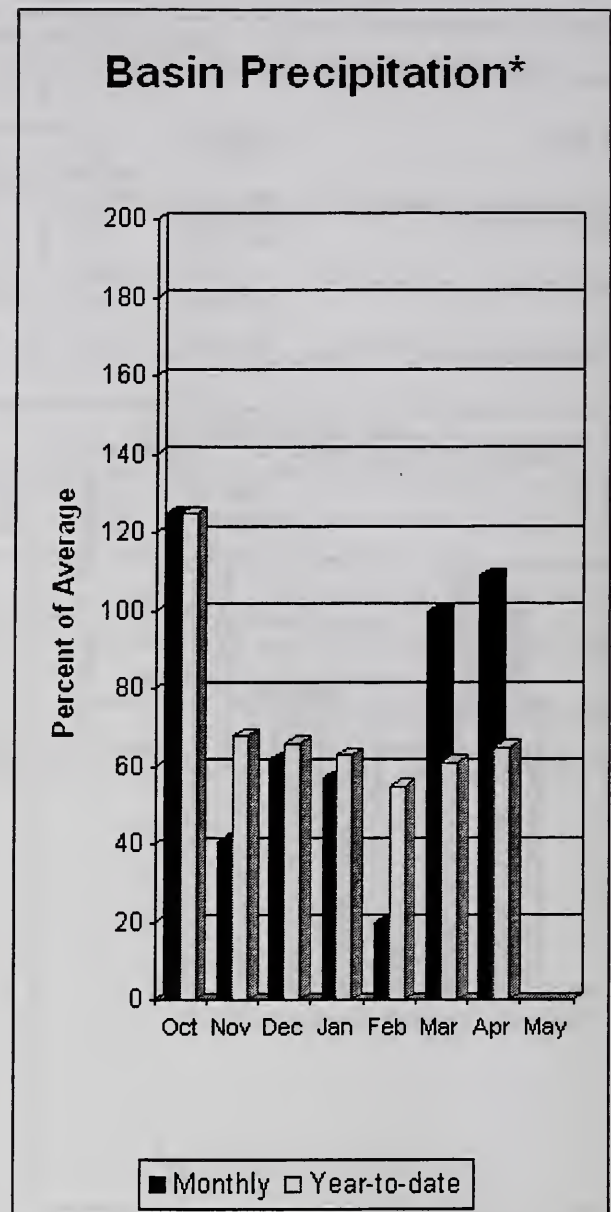
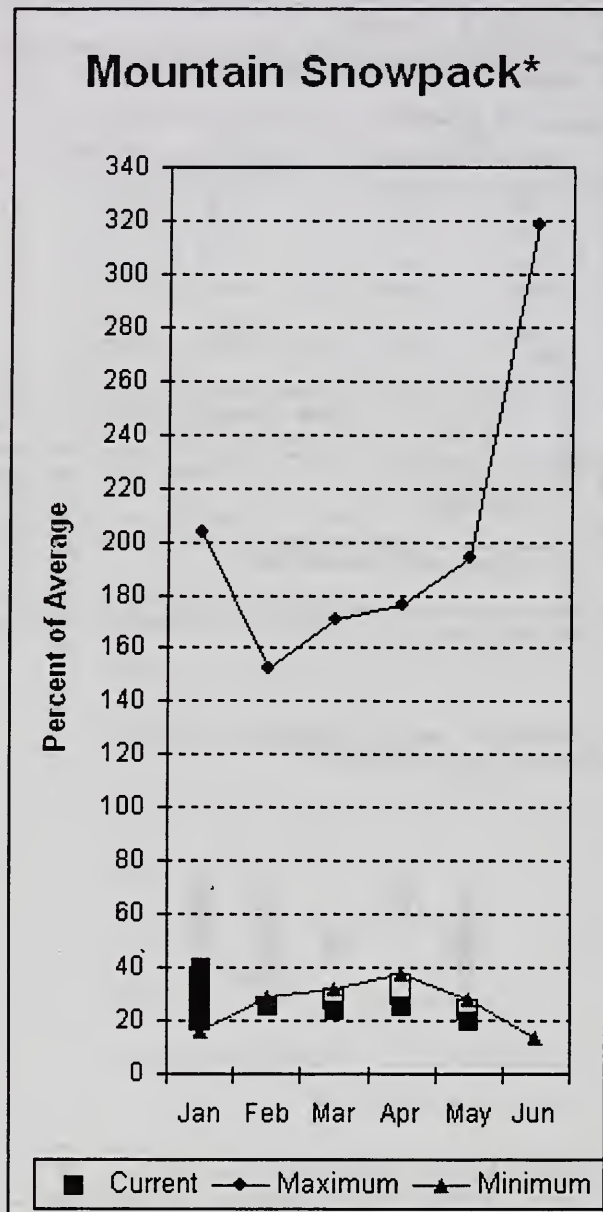
LOWER SNAKE RIVER BASIN Reservoir Storage (1000 AF) - End of April					LOWER SNAKE RIVER BASIN Watershed Snowpack Analysis - May 1, 2005			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
					LOWER SNAKE, GRANDE RONDE	9	67	49

\* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

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## Cowlitz - Lewis River Basins



\*Based on selected stations

Forecasts for May – September streamflows within the basin are Lewis River at Ariel, 55% and Cowlitz River at Castle Rock, 57% of average. The Columbia at The Dalles is forecasted to have 65% of average flows this summer. April average streamflow for Cowlitz River was 102% and 103% for Lewis River. The Columbia River at The Dalles was 75% of average. April precipitation was 109% of average and the water-year average was 65%. May 1 snow cover for Cowlitz River was 30%, and Lewis River was 10% of average. Average temperatures were 2 degrees above normal during April and 2 degrees above normal throughout the water year.

*For more information contact your local Natural Resources Conservation Service office.*



# Cowlitz - Lewis River Basins

## Streamflow Forecasts - May 1, 2005

		<<===== Drier ===== Future Conditions ===== Wetter =====>						
Forecast Point	Forecast Period	Chance Of Exceeding *						30-Yr Avg. (1000AF)
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
=====								
LEWIS at Ariel (2)	MAY-JUL	221	295	345	52	395	470	667
	MAY-SEP	325	400	450	55	500	575	812
COWLITZ R. bl Mayfield Dam (2)	MAY-SEP	65	529	845	57	1160	1625	1478
	MAY-JUL	29	419	685	55	950	1340	1247
COWLITZ R. at Castle Rock (2)	MAY-SEP	123	717	1120	57	1525	2115	1972
	MAY-JUL	50	544	880	54	1215	1710	1629
KLICKITAT near Glenwood	MAY-JUN	16.0	24	30	29	36	44	102
	MAY-SEP	21	32	40	30	48	59	135
COLUMBIA R. at The Dalles (2)	MAY-SEP	43744	50565	55200	65	59830	66660	84500
	MAY-JUL	35844	41534	45400	64	49270	54960	70500

### COWLITZ - LEWIS RIVER BASINS Reservoir Storage (1000 AF) - End of April

### COWLITZ - LEWIS RIVER BASINS Watershed Snowpack Analysis - May 1, 2005

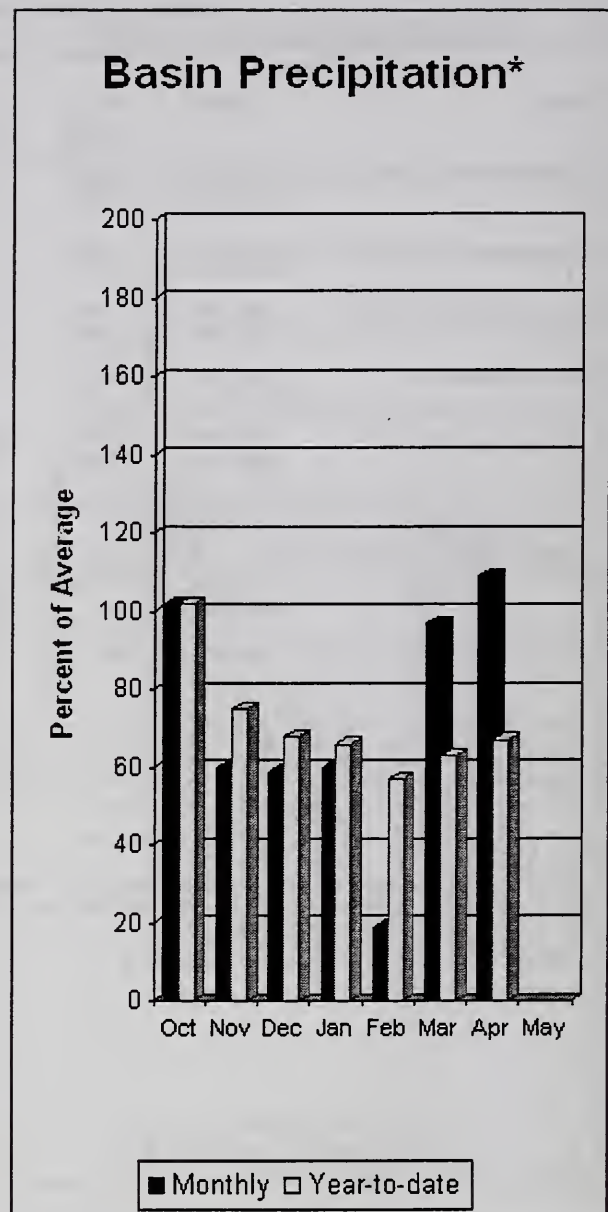
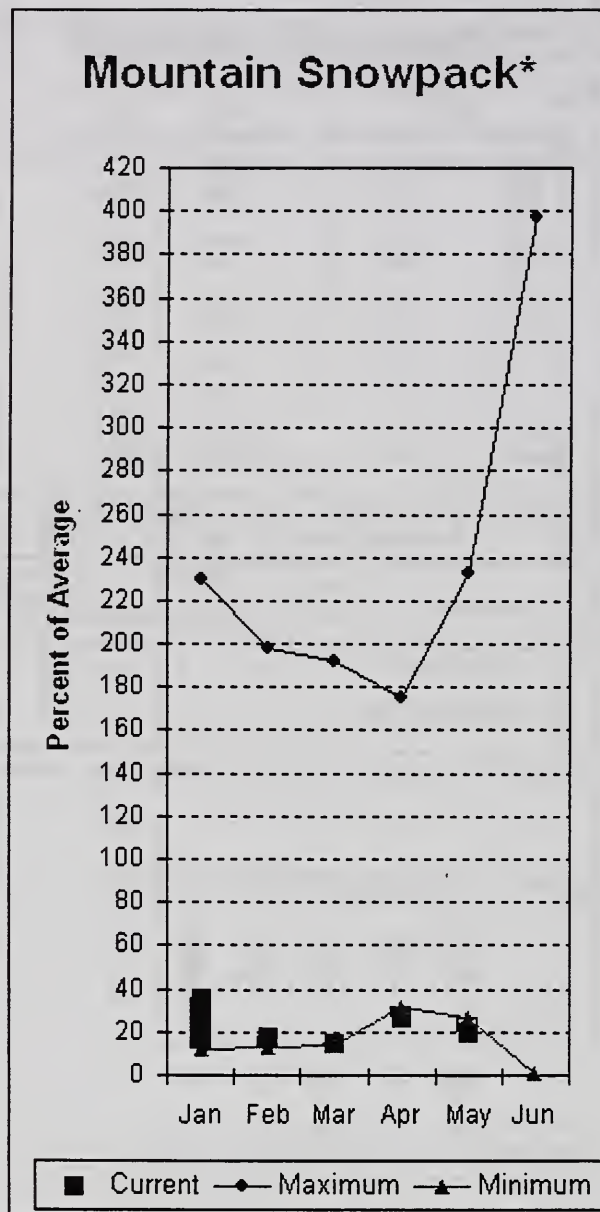
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
					LEWIS RIVER	4	12	10
					COWLITZ RIVER	6	31	30

\* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

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 (2) - The value is natural volume - actual volume may be affected by upstream water management.

## White - Green River Basins



\*Based on selected stations

Summer runoff is forecast to be 34% of normal for the Green River below Howard Hanson Dam and 55% for the White River near Buckley. May 1 snowpack was 36% of average in both White River and Puyallup River basins and 3% in the Green River Basin. Water content on May 1 at Corral Pass SNOTEL, at an elevation of 6,000 feet, was 13.1 inches. This site has a May 1 average of 35.3 inches. April precipitation was 109% of average, bringing the water year-to-date to 67% of average for the basins. Average temperatures in the area were 2 degrees above normal for April and 2 degrees above normal for the water-year.

*For more information contact your local Natural Resources Conservation Service office.*



# White - Green - Puyallup River Basins

## Streamflow Forecasts - May 1, 2005

		<<===== Drier ===== Future Conditions ===== Wetter =====>						
Forecast Point	Forecast Period	Chance Of Exceeding *						30-Yr Avg. (1000AF)
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
WHITE near Buckley (1,2)	MAY-JUL	111	165	190	55	215	270	348
	MAY-SEP	160	220	245	55	270	330	442
GREEN below Howard Hanson (1,2)	MAY-JUL	15.0	39	50	31	61	85	159
	MAY-SEP	20	50	63	34	76	106	185

### WHITE - GREEN - PUYALLUP RIVER BASINS Reservoir Storage (1000 AF) - End of April

### WHITE - GREEN - PUYALLUP RIVER BASINS Watershed Snowpack Analysis - May 1, 2005

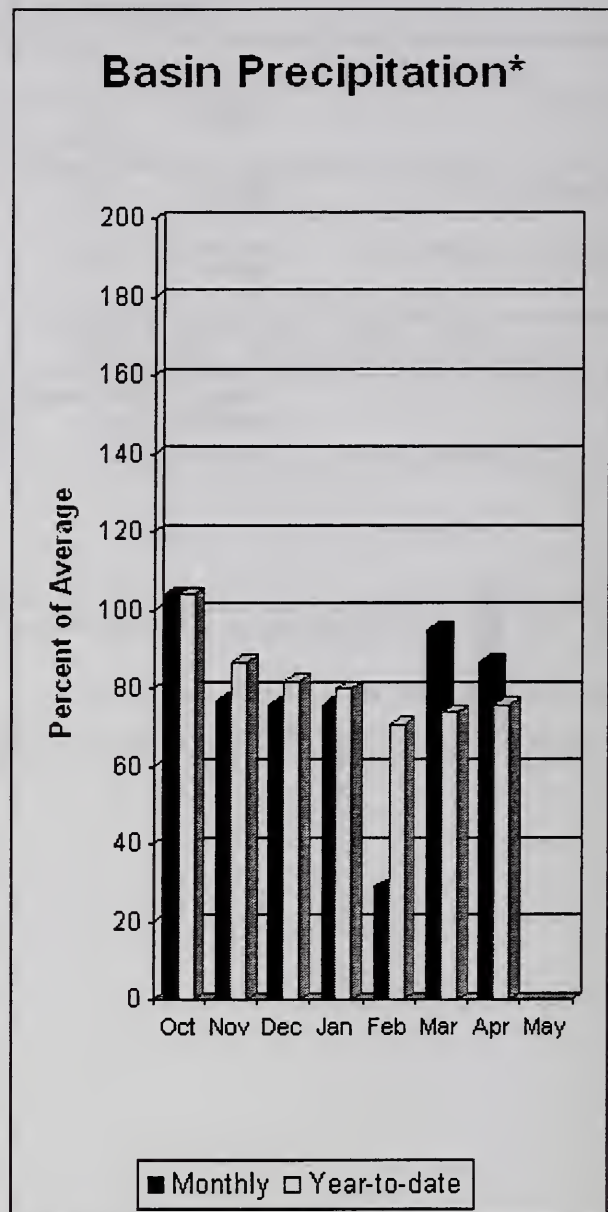
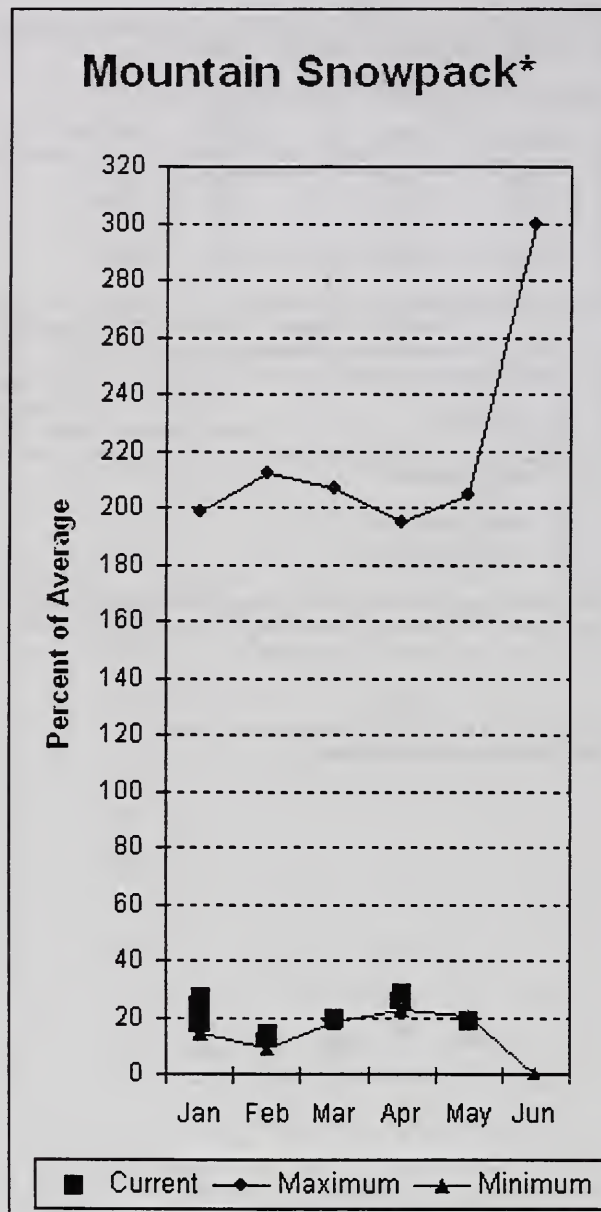
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
					WHITE RIVER	3	49	36
					GREEN RIVER	6	4	3
					PUYALLUP RIVER	3	49	36

\* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

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## Central Puget Sound River Basins



\*Based on selected stations

Forecast for spring and summer flows are: 46% for Cedar River near Cedar Falls; 50% for Rex River; 50% for South Fork of the Tolt River; and 56% for Cedar River at Cedar Falls. Basin-wide precipitation for April was 87% of average, bringing water-year-to-date to 76% of average. May 1 average snow cover in the Tolt River Basin was 35%, Snoqualmie River Basin was 28%, and Skykomish River Basin was 32%. The Cedar River Basin melted out early. Olallie Meadows SNOTEL site, at 3960 feet, had 11.6 inches of water content. Average May 1 water content is 55.1 inches at Olallie Meadows. Temperatures were 2-3 degrees above average for April and 2 degrees above normal for the water-year.

*For more information contact your local Natural Resources Conservation Service office.*



# Central Puget Sound River Basins

## Streamflow Forecasts - May 1, 2005

Forecast Point	Forecast Period	<===== Drier ===== Future Conditions ===== Wetter =====>						
		Chance Of Exceeding *						
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
CEDAR near Cedar Falls	MAY-JUL	12.3	19.0	24	46	29	36	52
	MAY-SEP	14.0	22	27	46	32	40	59
REX near Cedar Falls	MAY-JUL	2.5	5.8	8.0	46	10.2	13.5	17.4
	MAY-SEP	3.8	7.5	10.0	50	12.5	16.2	20
CEDAR RIVER at Cedar Falls	MAY-JUL	0.9	9.4	22	47	35	53	47
	MAY-SEP	0.9	8.4	23	50	38	59	46
SOUTH FORK TOLT near Index	MAY-JUL	3.5	5.0	6.0	55	7.0	8.5	11.0
	MAY-SEP	4.2	6.1	7.4	56	8.7	10.6	13.2

### CENTRAL PUGET SOUND RIVER BASINS Reservoir Storage (1000 AF) - End of April

### CENTRAL PUGET SOUND RIVER BASINS Watershed Snowpack Analysis - May 1, 2005

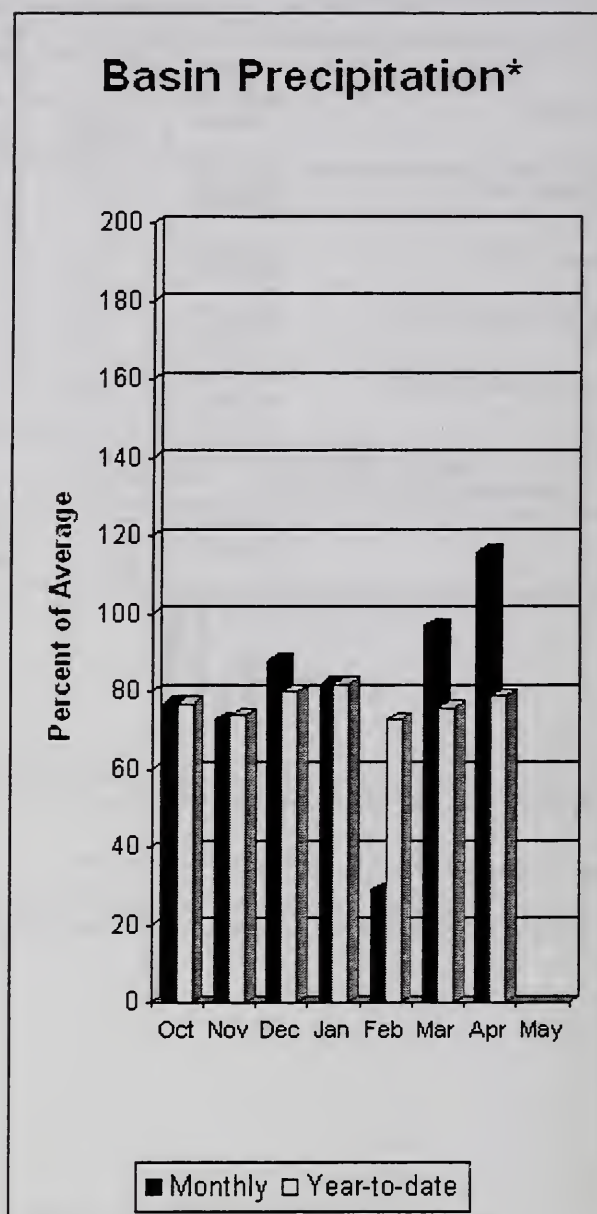
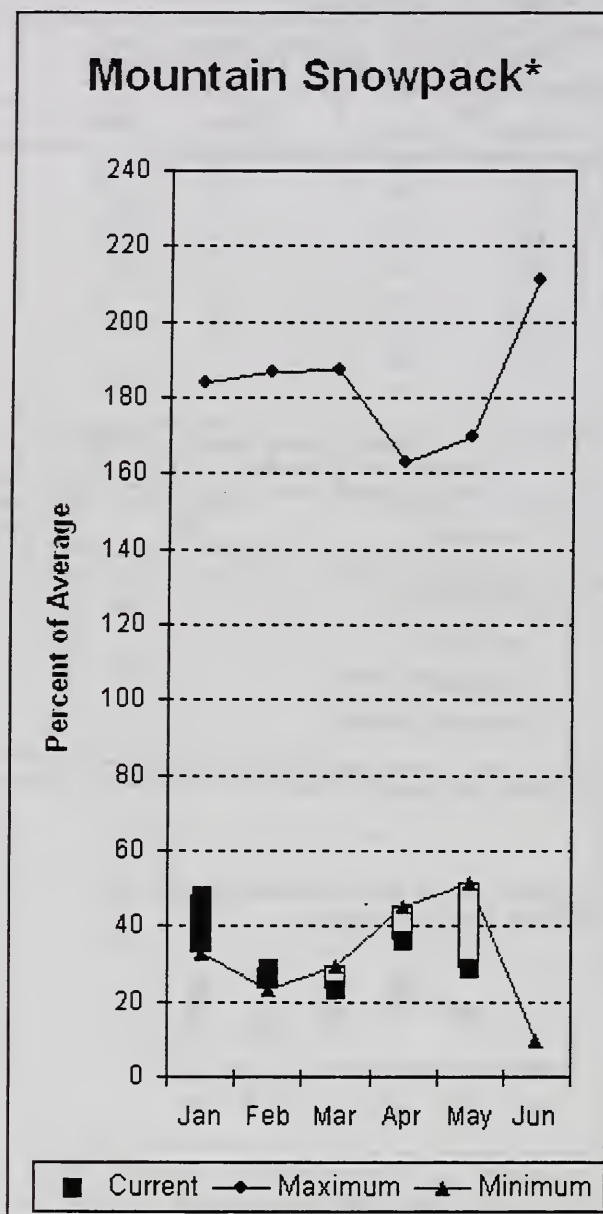
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
					CEDAR RIVER	4	0	0
					TOLT RIVER	2	36	23
					SNOQUALMIE RIVER	4	29	18
					SKYKOMISH RIVER	3	26	15

\* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

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## North Puget Sound River Basins



\*Based on selected stations

Forecast for Skagit River streamflow at Newhalem is 54% of average for the spring and summer period. April streamflow in Skagit River was 104% of average. Other forecast points included the Baker River at 77% and Thunder Creek at 69% of average. Basin-wide precipitation for April was 116% of average, bringing water-year-to-date to 79% of average. May 1 average snow cover in Skagit River Basin was 29%, and Nooksack River Basin was 0%. Data was not available for the Baker River Basin this month. Rainy Pass SNOTEL, at 4,780 feet, had 13 inches of water content. Average May 1 water content is 43.2 inches at Rainy Pass. May 1 Skagit River reservoir storage was 155% of average and 82% of capacity. Average temperatures for April were 2-3 degrees above normal for the basin and 1 degree above average for the water year.

*For more information contact your local Natural Resources Conservation Service office.*



# North Puget Sound River Basins

## Streamflow Forecasts - May 1, 2005

Forecast Point	Forecast Period	<===== Drier ===== Future Conditions ===== Wetter =====>						30-Yr Avg. (1000AF)
		Chance Of Exceeding *						
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
THUNDER CREEK near Newhalem	MAY-JUL	104	119	130	61	141	156	212
	MAY-SEP	190	205	215	69	225	240	310
SKAGIT at Newhalem (2)	MAY-JUL	690	775	835	52	895	980	1611
	MAY-SEP	905	995	1060	54	1120	1220	1964
BAKER RIVER near Concrete	MAY-JUL	395	445	480	70	515	565	684
	MAY-SEP	575	650	700	77	750	825	906

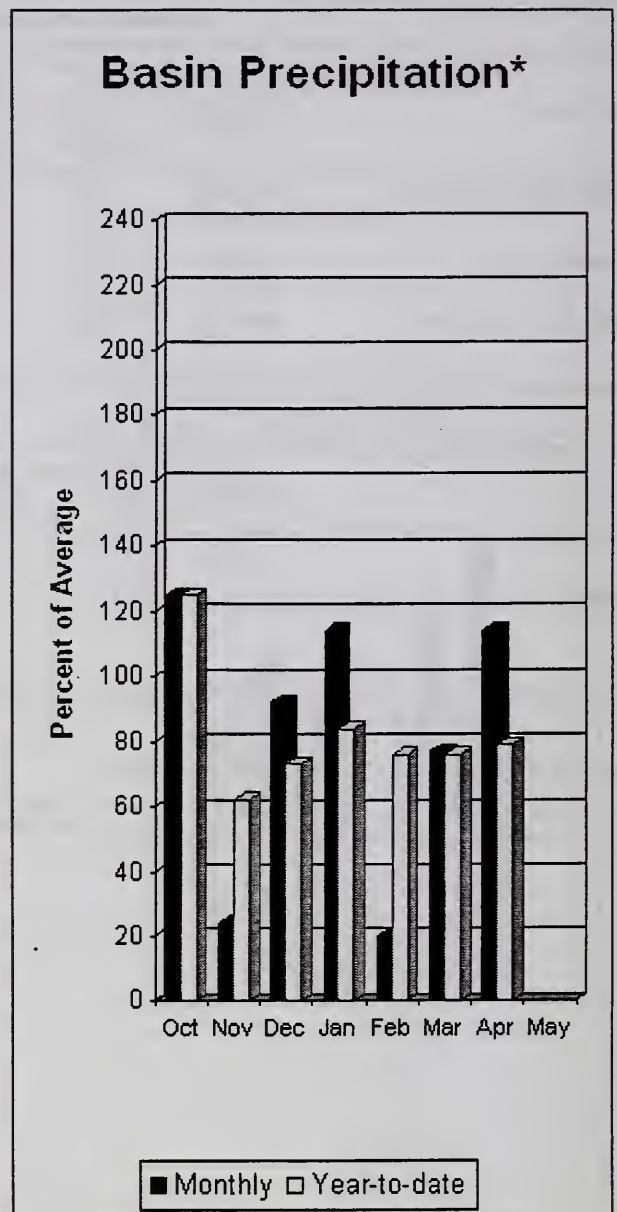
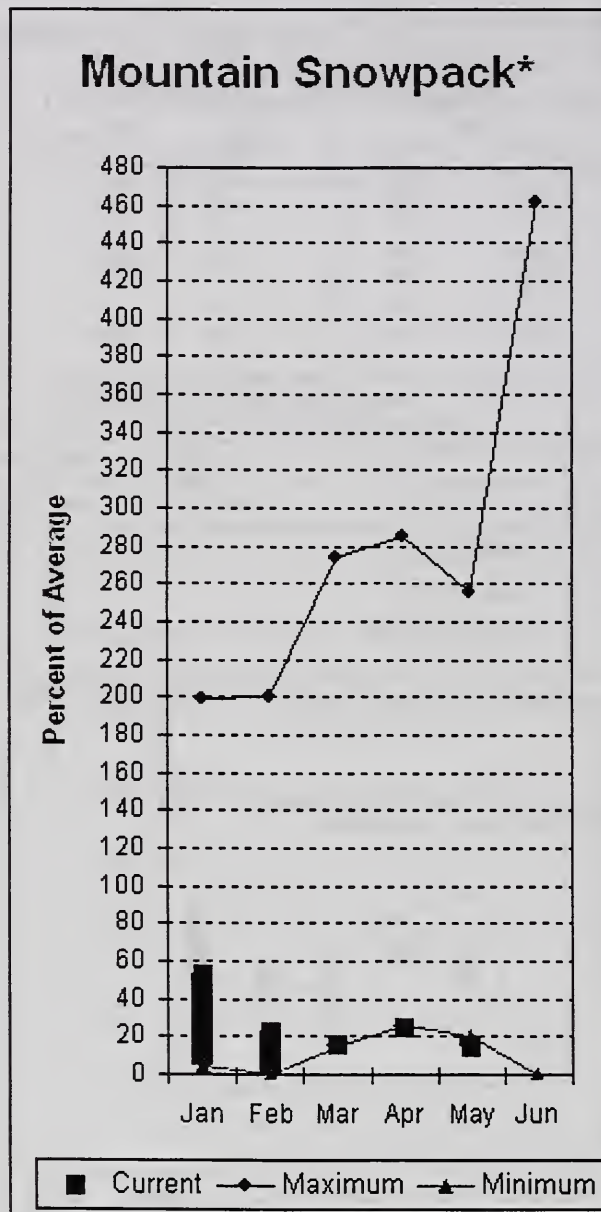
NORTH PUGET SOUND RIVER BASINS Reservoir Storage (1000 AF) - End of April					NORTH PUGET SOUND RIVER BASINS Watershed Snowpack Analysis - May 1, 2005			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
ROSS	1404.1	1144.5	---	708.8	SKAGIT RIVER	13	52	29
DIABLO RESERVOIR	90.6	83.9	---	85.9	BAKER RIVER	0	0	0
					NOOKSACK RIVER	1	45	0

\* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

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- (2) - The value is natural volume - actual volume may be affected by upstream water management.

# Olympic Peninsula River Basins



\*Based on selected stations

Forecasted average runoff for streamflow in the Dungeness River and Elwha River basins is 60% and 52%, respectively. Big Quilcene and Wynoochee rivers should expect below average runoff this summer as well. April precipitation was 114% of average. Precipitation has accumulated at 79% of average for the water year. April precipitation at Quillayute was 9.73 inches. The thirty-year average for April is 7.44 inches. Olympic Peninsula snowpack averaged 37% of normal on the east side and only 12% in the Hurricane Ridge area on May 1. Temperatures were 2 degrees above average for April and 1-2 degrees above average for the water year.

*For more information contact your local Natural Resources Conservation Service office.*



# Olympic Peninsula River Basins

## Streamflow Forecasts - May 1, 2005

		<<===== Drier ===== Future Conditions ===== Wetter =====>>						
Forecast Point	Forecast Period	===== Chance Of Exceeding * =====						30-Yr Avg. (1000AF)
		90% (1000AF)	70% (1000AF)	50% (1000AF) (% AVG.)		30% (1000AF)	10% (1000AF)	
		-----						
DUNGENESS near Sequim	MAY-SEP	65	73	79	60	85	93	132
	MAY-JUL	54	60	64	61	68	74	105
ELWHA near Port Angeles	MAY-SEP	175	200	220	52	240	265	423
	MAY-JUL	142	164	178	53	192	215	338

### OLYMPIC PENINSULA RIVER BASINS Reservoir Storage (1000 AF) - End of April

### OLYMPIC PENINSULA RIVER BASINS Watershed Snowpack Analysis - May 1, 2005

Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
					OLYMPIC PENINSULA	4	29	15

\* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

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- (2) - The value is natural volume - actual volume may be affected by upstream water management.



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*Issued by*

**Bruce Knight**  
**Chief**  
**Natural Resources Conservation Service**  
**U.S. Department of Agriculture**

*Released by*

**R.L. "Gus" Hughbanks**  
**State Conservationist**  
**Natural Resources Conservation Service**  
**Spokane, Washington**

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## **The Following Organizations Cooperate with the Natural Resources Conservation Service in Snow Survey Work\*:**

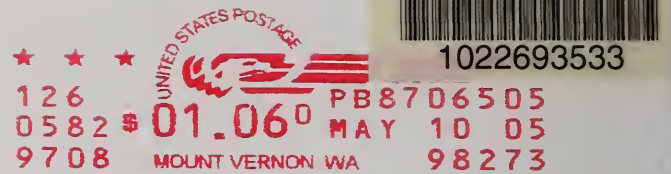
<b>Canada</b>	Ministry of Sustainable Resources Snow Survey, River Forecast Centre, Victoria, British Columbia
<b>State</b>	Washington State Department of Ecology Washington State Department of Natural Resources
<b>Federal</b>	Department of the Army Corps of Engineers U.S. Department of Agriculture Forest Service U.S. Department of Commerce NOAA, National Weather Service U.S. Department of Interior Bonneville Power Administration Bureau of Reclamation Geological Survey National Park Service Bureau of Indian Affairs
<b>Local</b>	City of Tacoma City of Seattle Chelan County P.U.D. Pacific Power and Light Company Puget Sound Power and Light Company Washington Water Power Company Snohomish County P.U.D. Colville Confederated Tribes Spokane County Yakama Indian Nation Whatcom County Pierce County
<b>Private</b>	Okanogan Irrigation District Wenatchee Heights Irrigation District Newman Lake Homeowners Association Whitestone Reclamation District

\*Other organizations and individuals furnish valuable information for the snow survey reports. Their cooperation is gratefully acknowledged.



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# Washington Water Supply Outlook Report

Natural Resources Conservation Service  
Spokane, WA

